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## Proper Venting Reduces Losses

Cinder Beds Are Used to Advantage in Molding Pits  
—Vent Rod Produces Better Vent  
Than Wire

BY PAUL R. RAMP\*

NO operation connected with molding or core-making is of more importance than venting. More defective castings are produced chargeable to improper venting than to any other molding operation.

The term "venting" refers to a method of carrying off the gases that are created when the molten metal is poured into the mold and it comes into contact with the surfaces of the mold and the cores. The gas must escape through the sand or through the molten metal. If it can pass through the sand fast enough, the metal will lie quietly in the mold, and a perfect casting, or a casting free from blow defects, can be expected.

If the gas is forced through the liquid metal on account of insufficient outlet through the sand, a defective casting will be the result. The passage of the gas through the iron creates a state of agitation which continues until the metal solidifies, leaving blow holes wherever the gas is located at the time the metal freezes.

Several methods of venting a mold are very effective, among them, the use of cinder beds, vent rods, vent wires, hay rope, sawdust and coarse open sand.

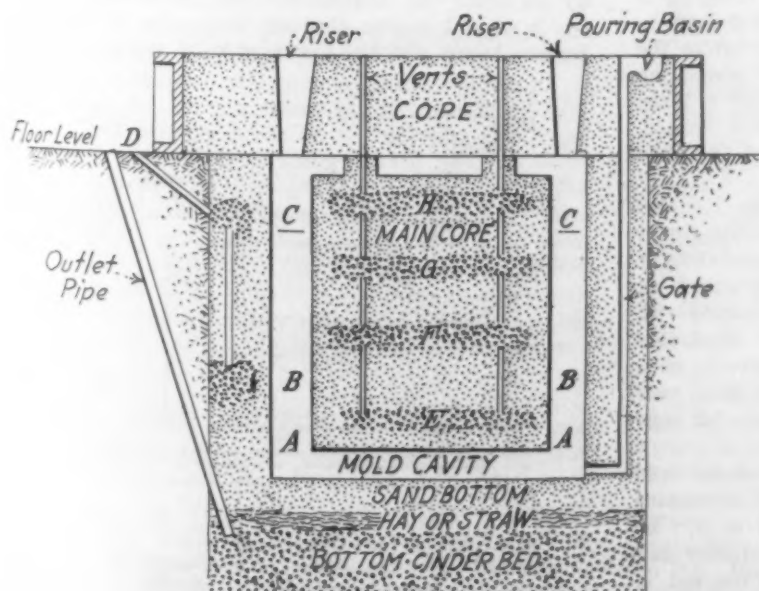
The cinder bed is generally used below the lower

extremity of the mold, and the gas that is generated when the mold is poured is led to the cinders by vent passages that are produced with a vent wire. The vent passages should start about 1 in. below the lower surface of the mold and continue into the cinder bed. It is necessary to cover a cinder bed with a layer of hay or straw to prevent the sand from closing the interstices in the cinders, thereby defeating the purpose of the bed.

In ramming a deep mold it is good practice to provide several cinder beds in the wall of the mold, each one connecting with the one above it. A connecting passage is produced by ramming in a gate pin and drawing it out when the ramming has reached the height necessary for the next cinder bed. The passage can be filled with small cinders, thus producing a cinder connection between each cinder bed.

Fig. 1 is a cross-section of a large roll mold, showing the cinder bed under the mold and several cinder beds in the walls of the mold. The beds function as follows:

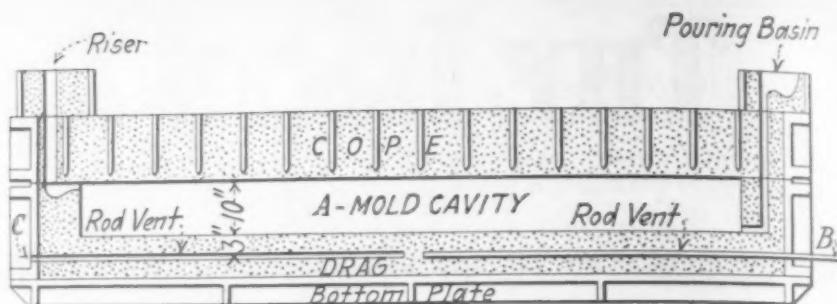
While the metal is rising to the level indicated by letter "A," the gas generated is being forced down to the cinder bed under the mold, encountering very little resistance, but as it rises in the mold to a point indicated by the letter "B," the gas will find an easier escape through the cinder bed that is located in the



*In a Pit Mold for a Large Roll, Cinder Beds are Used Both in the Drag and the Main Core to Permit the Escape of Gas*

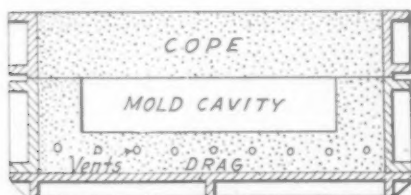
\*Superintendent Foundries and Pattern Shops, Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

*In the Drag of a Large Straightening Block Mold Vent Rods Are Laid as Close to the Pattern as Possible. The ends of the rods project beyond the side of the flask so that they may be removed after ramming*



wall of the mold opposite the letter "B." The same thing applies to the cinder bed opposite "C." It can be readily seen that with the cinder beds in the walls the gas escapes more easily than if it were forced down to the lower cinder bed under the mold. However, these auxiliary cinder beds are not necessary except for very deep molds. The final outlet for the gas accumulated by the cinder beds located opposite "B" and "C" is shown at letter "D," which is on a level with the foundry floor.

In making a cinder bed under a large mold the cinders should be no smaller than the size of a walnut, and they should be larger, if possible. When the



*An End View of the Straightening Block Mold, Showing the Location of the Vents in the Drag*

cinders are too small, the gas does not work through them fast enough.

A well-made cinder bed in a mold pit can be used many times if it has been well protected with a thick layer of hay or straw.

In placing the outlet pipe for the bottom cinder bed of a large mold, as shown in Fig. 1, the lower end of the pipe must rest upon the bed. The pipe should not project into the cinders, since the lower opening may become clogged if it is too close to the bottom of the bed. The upper end of the outlet pipe should be on a level with the foundry floor and should be covered with a special plug, except when the mold is being poured.

When pouring a large mold that is made on a cinder bed, it is good practice to heat a rod by plunging it into the hot metal in the ladle and to push it down to the bottom of the outlet pipe in order to ignite the first gas that is generated. This is a precaution against an explosion, which might occur if a large volume of gas were generated before it was ignited. An explosion sometimes injures portions of the mold that the metal has not reached.

The main core for the mold shown in Fig. 1 is also vented with cinder beds. The first and lowest cinder bed is shown at letter "E," which is connected by a vent passage to the cinder bed above it, shown at letter "F." The bed at "F," in turn, is connected with the bed shown at "G," and the last layer of cinders is shown at "H." The layers of cinders provide open spaces for the gases to work through to the main vent outlets, which are shown extending through the cope part of the mold.

The foregoing description of the use of cinder beds and cinders for vents is not intended as a recommendation that this method of venting should always be used. Rods are excellent for venting when they can be used economically. With this method, the rod is

rammed with the mold and drawn out after ramming is completed. This produces a clear passage leading from the part of the mold where the gas is generated direct to the open air.

In cases where a flask is used and a heavy body of metal will lie on a large mold area, it is a good plan to lay vent rods horizontally as close to the pattern as is possible without permitting the metal to break through. The vent rods are drawn out after the drag part of the mold has been rammed, the bottom plates clamped on, and the mold rolled over. The vents provide a clear passage for the gas and prevent cuts and scabs on a large mold surface.

Fig. 2 is a cross-section of a large straightening block mold that is vented with rods in the manner described. The shape of the mold cavity, "A," is such that a large body of metal will cover the surface of the mold when it is poured and a large volume of gas will be generated. "B" shows a vent rod ready to be drawn out.

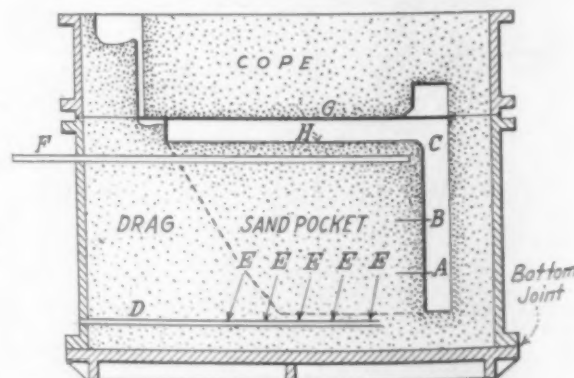
In a mold of this kind, which is a block 48 in. wide, 120 in. long and 10 in. deep, weighing about 15,000 lb. when cast,  $\frac{1}{2}$ -in. vent rods should be used. The distance between the rods should not be more than 7 in. from center to center, and they should be laid within 4 in. of the bottom of the pattern.

Fig. 3 is another view of the block mold showing the spacing of the rod vents. These vents are more reliable than a coke bed under the pattern. In providing the vents, the usual procedure is as follows:

Ram the drag to the level of the vent holes in the side of the flask. Vent the entire surface over the pattern with a  $\frac{1}{4}$ -in. vent wire. Next lay the vent rods in place, allowing their ends to project out of the flask, so that they may be drawn out.

Another illustration of the use of vent rods is shown in Fig. 4, which represents a mold for a heavy angle block with large brackets on either side that form a dangerous sand pocket. The action of the gas when this mold is being filled with metal is as follows:

When the rising metal reaches the level indicated by the letter "A," considerable gas has been generated, which should escape through the vents between the bottom board and the lower edge of the drag in the

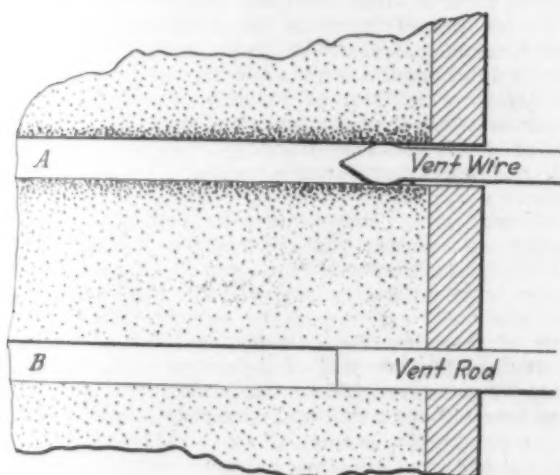


*In the Heavy Angle Block Mold, Shown in the Cross-Section, a Dangerous Sand Pocket Is Formed. For the escape of gas, vents have been provided at "D" and at "F"*



direction indicated by the letter "E." When the metal reaches the level indicated by "B," there is a greater volume of gas generated than will easily escape through the vents mentioned. The natural tendency of the gas is to rise, and unless the surface of the sand pocket at "C" is well nailed, the pressure of the rising gas will force portions of the mold loose, and the gas will enter the metal, producing blow holes. The portion of the surface of the mold that has been forced from its proper place will float to the surface and produce sand holes. The result is a casting with a scab on the bottom surface, indicated by the letter "H," sand holes on the top surface, at "G," and blow holes in the center.

The proper way to vent this mold is as follows: Letter "F" indicates vent rods that are laid 2 in. below the surface of the sand pocket. When the volume of gas becomes so great that it cannot escape through the vents between the drag and the bottom board, it travels upward, but before it reaches the level indicated by the letter "C," it is released through vent



*A Vent Wire Is Pushed into the Rammed Mold, Compressing the Sand Around the Vent. The rammed vent rod forms a molded vent, around which the sand is of no greater density than the remainder of the mold*

passages at "F," thus preventing the usual scab or cut at letter "H."

When vent rods are used on a mold of this character, the mold can be rammed harder without danger of cutting or scabbing, on account of the quick release afforded the gas. Moreover, a casting truer to pattern is produced. It is also seldom necessary to nail the surface.

In the lower half of the drag it is advisable, when possible, to use rod vents instead of trying to carry off the gas between the bottom board and drag. A vent rod of this kind is shown at the letter "D."

The vent passage produced by ramming and drawing out a vent rod is superior to the vent made by pushing a vent wire through the rammed sand. The rammed vent rod forms a molded vent passage. The opening produced by the vent wire is a punched vent, and the effect of the vent wire's forcing its way through the rammed sand is to compress it. The compression closes the grain of the sand around the vent and makes it more difficult for the gas to work its way to freedom.

Compression does not occur when a vent rod is rammed in a mold and drawn out. The sand around this passage is as open as any part of the mold. Consequently the gas escapes more readily.

Fig. 5 is an illustration of the difference between the density of the sand around a vent made with a rod and the density of the sand around a wire vent. The vent produced by the vent wire at "A" is sur-

rounded by a wall of compressed sand, while the passage produced by the vent rod at "B" is surrounded by a wall of sand of the same density as the remainder of the mold. While a rod vent is more effective than a wire vent, in every-day practice it is not always possible or necessary to use vent rods.

## Manual Workers Earn More Than Office Workers and Advance as Rapidly

Factory workers and other industrial and manual workers, on the average, earn \$2 a week more than office workers of comparable type, according to an analysis of salaries paid clerical workers, made by the National Industrial Conference Board, New York. Magnus W. Alexander, president of the Conference Board, says: "Speaking from a quarter-century of experience in industry and affairs connected with industrial management, I do not believe that the average industrial worker's opportunity for promotion is one whit less than that of the office worker. Opportunities are numerous and ever increasing for those with eyes to see, the energy to prepare themselves and the initiative to seize them.

"There are some slight advantages in office work, in that it is not seasonal and the office worker is less subject to layoff in periods of business depression. But even in this the position of the industrial worker is being steadily improved. Office hours on the average are apt to be a little shorter than factory hours. On the other hand, office work to a considerable extent restricts physical exercise."

## General Electric Awarded Prizes for Sesqui-Centennial Exhibits

Two grand prizes, three medals of honor and nine gold medals, in addition to a number of lesser awards, were received by the General Electric Co., Schenectady, at the Sesqui-Centennial Exposition, held recently in Philadelphia.

One of the grand prizes was for "Systems of Electric Transportation and Traffic Regulation Devices," in recognition of the excellence of the electric locomotive, street car equipment, automobile motors, Novalux traffic signals, and aviation beacon exhibited by the company. The other grand prize was awarded for "Excellence of Products and Service to Humanity." One medal of honor was for "Gas-Electric System of Drives for Buses," another for "G-E Mazda Lamps," and a third for "Turbine Super-Charger." The gold medals were awarded for some nine other exhibits of the company.

## More Safes and Vaults Made

Production of safes and vaults, together with steel burial vaults, in 1925 is reported by the Bureau of Census at \$23,043,708. This output came from 35 establishments employing 3865 wage earners. The production gained 20.6 per cent over the \$19,101,314 of 1923 from 34 establishments and 3476 wage earners. The output of safes, safety boxes, chests and vaults produced the entire gain, for there was a reduction both in the steel burial vaults and in the miscellaneous products. The safes, etc., went up 29.5 per cent, from \$14,707,232 in 1923 to \$19,040,331.

Nineteen of the 35 establishments in 1925 were located in Ohio. There were 5 in New York, and 11 in nine other States.

The Wall-Johnson Supply Co., Santa Fe Building, San Francisco, moved its offices Feb. 1 to 525 Sixth Street, in order to have its office and warehouse in one building and at the same address. The company was organized Nov. 1, 1926, for the purpose of marketing ferrous and non-ferrous scrap, structural steel, merchant bars, plates, sheets and cotton waste. Charles A. Wall and Walter G. Johnson are officers of the company.

# British Exports of Finished Steel

Much Crude Steel Imported—Half of Exports to Colonies—Importance of Plates and Sheets—Flexibility of Mills a Competitive Factor

BY PAUL M. TYLER\*

**A**FTER "muddling through" the most disastrous strike in even her own stormy coal mining career, Great Britain has set about the task of regaining her lost leadership among steel exporting nations. Forced into second place by Germany in 1913 and by the United States during and for a time after the war, she took the lead again in 1922, only to lose it to France in 1925.

To American steel exporters, the future of British trade is of special interest because, for many of the products which they have found most profitable to export, their keenest competition comes from Great Britain. Exports from the Continent consist principally of Thomas steel, but in England, as in the United States, production by the basic Bessemer process is insignificant (about 100,000 tons annually) and, since output by the acid Bessemer process is declining also, open-hearth steel forms the bulk of the production. Moreover, Great Britain and the United States are the only important exporters of tin plate, galvanized sheets and light sheet products generally; and they are rivals in many other kinds of products.

## British Firms Import Billets and Sheet Bars

In Great Britain there are many rerolling plants, custom mills that do "rolling for hire," and also a great many steel works that buy cold pig iron and scrap. Only a trifle over one-fourth of British pig iron is used in the molten state, and over two-thirds of the output is made for sale. All these firms that do not own blast furnaces, and even some that do (especially those located near seaboard) have found it convenient

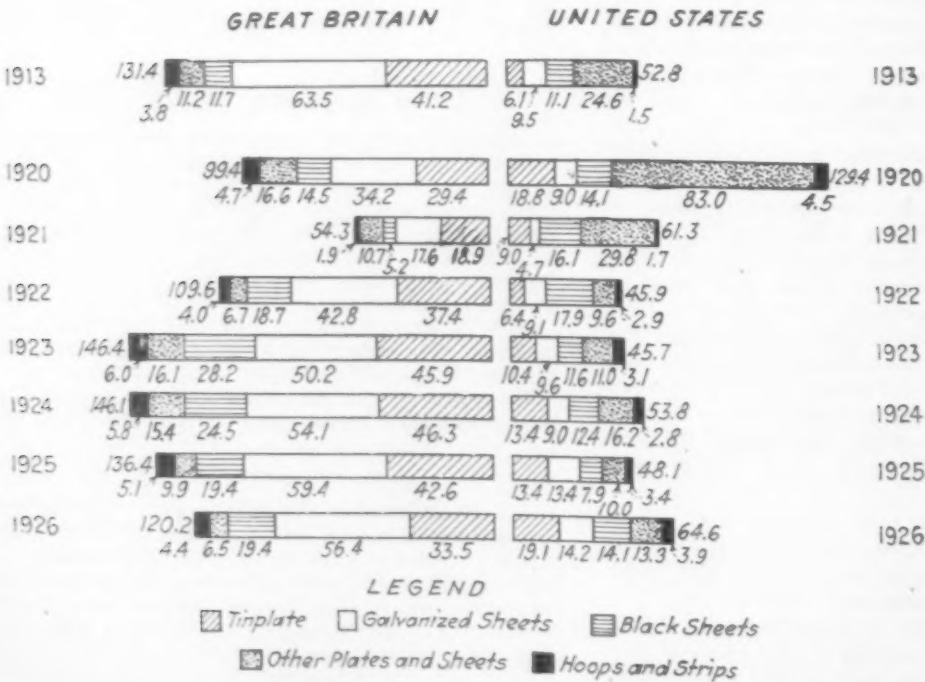
from time to time to buy foreign billets or sheet bars. Even American semi-finished steel has been imported for rolling in England.

While these practices are not in harmony with accepted ideas of economy, their advantages in the way of flexibility of operations were proved again during the recent strike which, beginning on May 1, dragged well into November before the miners began straggling back to work in large numbers. Despite the stoppage of all but five of the blast furnaces, and a slump in ingot production from 784,100 tons in March, to 32,100 tons in July, exports maintained the remarkable average (May to October) of 211,000 tons monthly, only 32 per cent less than the average during 1925. In the case of sheets and pipe, the drop in exports was even less, and wire manufactures actually showed an increase.

Naturally these exports, at a time when home ingot production was at a standstill, could be sustained only by semi-finished imports. But even in 1925, when conditions were relatively normal, the import tonnage amounted to 73 per cent of the exports. Almost two-thirds of these imports, however, consisted of pig iron (15 per cent), crude and semi-finished steel, including ingots (2 per cent), billets and blooms (24 per cent), sheet bars (19 per cent), and wire rods (4 per cent).

Conversely, the exports of ingots, billets and other semi-finished steel items normally amount to only 5000 or 6000 tons a year and, as compared with 1913, the exports of pig iron, rails and structural shapes—all more or less bulky products—had shrunk, 50 per cent or more, even before the strike. The exports of sheet products, on the other hand, have been well maintained and, while increasingly large quantities both of wire

\*1817 Thirty-seventh Street, N. W., Washington.



Exports of Sheets and Plates from Great Britain and from the United States, Expressed in Thousands of Gross Tons per Month. For 1926 the Average of the First Ten Months Was Taken



rods and of wire are imported, the exports of wire—comprising much galvanized wire and small sizes, as well as sundry specialties such as extra quality plow steel wire for wire rope—were almost one-fourth greater in 1925 than in 1913.

#### England the "Workshop of the World"

Ever since the "Industrial Revolution," England has tended more and more to become the home of finishing trades. Agriculture and even wool growing were soon sacrificed, to further manufacturing. British ships brought raw materials from all over the globe but, except for coal and iron and steel, they carried outward mostly highly manufactured goods.

American cotton, made up into piece goods in Manchester, was sold back to the United States and, before the war, our main supply of ferromanganese came from England, where it was made from ores carried from India or the Caucasus. We are now finding it about as cheap and more convenient to import manganese ore and to smelt it here, and American mills, also, are supplying our cotton goods—except certain qualities, mostly those made from fine count yarns. Nevertheless, in many and varied lines of activity, England is still the "workshop of the world."

The British iron and steel industry, therefore, is simply following the national trend. As the best local ores became exhausted, it imported richer ores from Spain and Sweden—even from Brazil—and it smelted them at various seaports where good coal was nearby and cheap. Several notably successful ventures are based upon the large supplies of low-grade home ores, as these can be mined and smelted as cheaply as the Lorraine ores, which are little richer in iron. Nevertheless, for many years, from one-third to one-half of British pig iron has been derived from foreign ores.

Pig iron production, like that of ore, shows the same downward trend. Although growing rapidly in other countries after 1900, it has failed to increase in Great Britain. Her production, 8,960,000 tons in 1900, and 9,608,000 tons in 1905, rose slowly to a maximum of 10,260,000 tons in 1913, and then declined. It is now less by 40 per cent than it was before the war.

Exports of pig iron likewise have fallen off. In 1913 they were five times the imports, but lately they have been much less than twice the imports, which, meanwhile, have increased. While these changes in the pig iron trade are due in part to world-wide factors—to the building of furnaces in new localities and to the larger percentage of scrap now employed for making steel—the fact remains that, at least temporarily, the United Kingdom has virtually lost one of her few remaining bulky export products.

#### Becoming a Purely Finishing Industry

That an even more striking change has taken place in the steel trade is indicated clearly by Table I. Com-

parisons are made here between imports and exports of leading products in 1913 and in 1925 and for September, 1926, which month appears to be fairly representative of the situation during the late strike.

Since the figures for 1925 are typical of the post-war situation, the table shows that the British steel industry tends more and more to take on the characteristics of a purely finishing industry. The price of British coal has risen to meet the cost of German coal and, instead of importing merely ore, the industry now imports a rapidly increasing amount of semi-finished steel. At the same time, the exports are becoming confined principally to the lighter and more highly finished products.

As may be learned from this table, the losses in exports have been restricted mainly to rails, pig iron and structural shapes. The drop in ferroalloys is explained largely by the reduced shipments of ferromanganese to the United States, mentioned above. The apparent drop in iron and steel bars is due solely to the falling off in bar iron, for steel bar exports have remained about the same as before the war. The decline in pipes and fittings took place wholly in cast pipe, exports of wrought pipe having substantially increased. In short, bulky products, while coming into the United States in increasing quantities from the Continent, are fast being eliminated from the exports of Great Britain.

Like the United States, England exports much steel in the form of machinery and other manufactures. In 1913 the net weight of exports of machinery alone was more than 750,000 tons, and tremendous quantities of plates and other steel were absorbed by the shipyards. Shipbuilding, however, has everywhere suffered heavily. In Great Britain the tonnage launched amounted to 1,932,152 tons in 1913 and reached 2,040,127 in 1920. But it dropped to 1,050,000 in 1925 and in 1926, even before the strike, some of the largest shipyards were almost idle.

Machinery exports, also, are less than formerly—by almost one-third. The logical development of the trend toward specializing on finished goods is greater refinement and larger development of machine shop products, but England so far has been less successful than the United States in the export of goods that can be made by "mass production." American firms sell typewriters and cash registers abroad and have actually developed a great export of safety razor blades made from imported strip steel. Swiss mechanics, likewise, through their skill and labor, greatly enhance the value of steel by transforming it, for example, into hair-springs for watches. British materials, however, have made their way mostly because they are rugged and not so much because they are clever devices.

#### Importance of Sheet Products

Exclusive of plates (over 3/4-in.) and of hoops and strips, sheet products formed 28 per cent of the quan-

Table I.—Imports and Exports of the United Kingdom, 1913, 1925, 1926

(Monthly averages, in thousands of gross tons)

Commodity	1913		1925		1926 (September)	
	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.
Pig iron.....	15.4	78.8	22.0	39.0	61.5	8.2
Ferroalloys.....	2.6	14.9	1.8	7.7	0.7	2.5
Ingot, billets, etc..	75.4	...	101.1	...	194.1	...
Iron and steel bars and rods.....	35.7	32.7	43.5	22.9	79.5	9.2
Shapes.....	9.1	10.2	9.1	5.3	19.7	1.6
Hoops and strips...	6.0	3.8	6.0	5.1	14.8	3.5
Plates and sheets—black.....	14.1	22.9	14.6	29.3	38.4	12.2
Tin plate.....	...	41.2	...	42.6	...	19.0
Galvanized sheets..	...	63.5	...	59.4	...	43.0
Rails, etc.*.....	1.8	52.1	2.7	35.9	2.8	4.7
Pipe and fittings...	5.3	33.3	7.5	23.9	11.8	19.5
Wire and wire products.....	8.7	9.6	10.5	9.9	11.1	8.3
Other <sup>b</sup> .....	11.8	51.1	8.0	39.9	11.3	28.5
Total.....	185.9	414.1	226.8	310.9	445.7	160.2

\*Includes sleepers and fishplates but not railroad tires, axles or wheels. <sup>b</sup>Mainly heavy hardware; does not include machinery.

Table II.—Exports of Sheet Products from Great Britain, in Gross Tons

Product	1913	1924	1925	1926*
Hoops and strips...	45,768	65,210	60,562	53,000
Plates (over 3/4-in.)	126,380	182,751	119,234	78,000
Sheets (under 3/4-in.)	68,152	246,756	199,236	233,000
Black plates.....	71,775	44,389	34,739	↑
Galvanized sheets..	762,075	649,863	712,084	676,000
Tin plate, etc.....	494,497	556,317	512,671	403,000
Total.....	1,578,587	1,746,286	1,629,426	1,443,000

\*Estimated on basis of 10-month figures.

†Included with sheets (under 3/4-in.).

Table III.—Destination of Exports of Iron and Steel from Great Britain

Year	Quantities		Values	
	Total (Gross Tons)	Per Cent to British Possessions	Total (Pounds Sterling)	Per Cent to British Possessions
1913	4,969,000	46.5	55,351,000	?
1920	3,251,000	43.5	122,907,000	45.8
1921	1,697,000	61.2	62,604,000	53.2
1922	2,397,000	48.5	60,682,000	52.7
1923	4,317,000	44.0	76,156,000	46.2
1924	3,851,000	48.9	74,524,000	50.9
1925	3,741,000	52.0	?	?

tity and 34 per cent of the value of British exports of iron and steel in 1913. In 1925, the proportions had increased to 39 per cent and 42½ per cent respectively. Including plates and strips, the course of this trade has been as indicated in Table II.

India is by far the leading market for galvanized sheets. While the relatively new galvanized industry in Japan accounts for roughly one-half the British exports of black plate (which Japan imports from the United States, also), the Indian Tariff Board recently concluded that, so long as both black plate and slab zinc had to be imported, it would probably cost more than it would be worth to try further to develop, by means of subsidies or higher duties, a similar industry in India. Australia absorbs a substantial tonnage of galvanized sheets and, with New Zealand, accounts for about one-half of the exports of heavy plates. It is also the leading market for British tin plate, although tin plate is quite widely distributed, India, the Netherlands and the Argentine all being especially good customers.

The markets for British sheet products are much the same as those for American exports in the same categories. Except for Canada, where they are more favored by geographical considerations, American exporters are at some disadvantage in British possessions, because of preferential tariffs. Nearly one-half the total exports of sheets and plates from Great Britain are taken by British overseas possessions.

But it should be remembered that the British home market is relatively small. Only one-third of the Welsh tin plate and less than one-fifth of the local production of galvanized sheets are consumed in the British Isles. The sheet rollers, therefore, even more than other steel manufacturers in Great Britain, are vitally dependent upon export sales.

In view of the fact that the United States and Great Britain are the only important exporters of these products, and since wages in both countries are determined to a large extent by weekly output, the following comparison of average earnings per 8-hr. shift for certain typical occupations in American and in Welsh tin plate mills is of interest:

Average Actual Earnings per Shift in Tin Plate Mills, in 1926

Occupation	United States	South Wales
Rollers .....	\$13.10	\$5.81
Catchers (behinders) .....	6.45	2.31
Doublers .....	6.30	4.49
Heaters (furnacers) .....	8.36	4.21
Shearmen .....	8.20	5.32
Tinners .....	6.72	4.01
Brannners .....	5.18	1.96
Laborers—male .....	3.41	1.79
Women .....	3.07	1.52

According to the above tabulation, which is compiled from figures obtained by the United States Bureau of Labor Statistics for the spring of 1926, American wages are, roughly, double those paid in Wales for similar work. The working hours are about the same, namely, 42 2/3 hr. weekly.

#### Imports Mainly from Belgium and France

Of the pig iron exported, roughly two-thirds is foundry iron (including Cleveland No. 3 and some forge iron) and one-third is "acid" or "hematite" (Bessemer or low-phosphorus). While both are shipped mainly across the ocean (to various countries, including the United States), some of the latter is exchanged with Belgium and France for high-phosphorus irons. Belgium also furnishes (nominally, at least) the bulk of the imports of semi-finished steel; practically all the bar iron, about 50 per cent of the bars, angles, etc.; and most of the structural steel imported. France ranks next to Belgium as a source of British imports, and is growing more important. Even Luxemburg now sends more sheet bars to Great Britain than Germany, which, while it is still the principal source of wire rods, stands third or fourth in the supply of most semi-finished goods.

#### Importance of British Colonial Markets

Except for the black plate bought by Japan, and perhaps also for one or two more highly finished man-

ufactures which, like tacks and stoves, are included in the statistics for iron and steel, British colonies form the leading markets for British steel. Normally, of all the exports of British iron and steel, a trifle less than 25 per cent is sold in Europe and only about the same amount in the so-called neutral markets (e.g., South America, China and Japan), whereas British overseas dependencies absorb fully 45 per cent of the tonnage and more than 50 per cent of the value.

Because they are such important markets, the rapid industrialization of these overseas possessions is viewed with great concern by British steel makers. India, especially, has already established a large iron and steel industry of her own, and similar developments are under way or projected in Australia and South Africa.

Despite the growth of the home industry, however, the total imports of iron and steel into India increased from 76,800 tons monthly in 1913 to 80,700 tons in 1924, and, though they dropped to 67,100 tons in 1925, they averaged close to 100,000 tons monthly during the first half of 1926. Even the *net* imports, after deducting exports (mainly pig iron), which were 68,100 tons monthly in 1913, after falling to 31,600 tons in 1925, rose to 70,500 tons monthly during the first six months of 1926. In this instance, therefore, the rise of local manufacture has not yet definitely displaced exports from the British Isles—either in India or elsewhere.

One reason is that finished steel costs more to make in India. Evidence before the Indian Tariff Board shows that the low cost of producing pig iron does not extend to steel, as steel made locally costs \$6 to \$10 more per ton than imported steel. Aside from cost differentials, which are being offset more or less by bounties and tariffs, there is another reason for continued imports. India, with its 320 millions of people, is becoming industrialized. Its needs are growing rapidly, and only one-third of the consumption is supplied by local production, while 40 per cent or more is supplied by Great Britain and the remainder is imported from the United States and the Continent.

#### Flexibility of British Steel Making

It means a great deal to British steel makers that the coal industry could even stagger through a strike which, according to the Secretary of the Miners' Federation, Russia spent at least \$5,600,000—60 per cent of the total strike fund—to prolong. If British mines can again *lay down* their product cheaper at *seaboard* than any other coal in the world at *seaboard*, only then can the steel makers regain their former ability to export, instead of having to import, heavy steel.

British steel exporters have one advantage, however, that does not depend upon the uncertain fuel problem. Their ability to accept small orders for special sections and for odd sizes has strongly entrenched them in world trade. In Great Britain, although there is a growing number of up-to-date tonnage mills, there are also a great many smaller ones, and the latter are often designed to cater to the whims of an individualistic home market, as well as to meet the varied needs of foreign buyers. In the wire industry, for example, the average order, it is said, is only about one ton, and the average lot run through the mills is less than five tons.

Under such conditions, British plants must develop a high order of flexibility and—as compared with British or German plants that may run week in and week out, stopping only to dress the dies—they have an overwhelming advantage when it comes to specialty business which, in the aggregate, forms a considerable tonnage in international trade, not only in wire, but also in other products, even tin plate.

There is still another factor in British trade that must always be reckoned with. That is the doggedness that goes to make up the fiber of the men in the iron and steel industry—from the Prime Minister in London down even to the humblest charge-wheeler persistently pushing his little lorry at the oldest hand-filled stack in the Black Country. This spirit alone enabled exports to be maintained throughout the strike, and it may increase them in 1927.



# Merit in Copper-Silicon Alloys

Comparative Cheapness, High Strength, Ease of Working, and Resistance to Corrosion Are Salient Features

BY M. G. CORSON\*

THERE was a time when the most important auxiliary metals of the metallurgical industries, silicon, manganese and chromium, were not manufactured even in an approximately pure state by any but the aluminothermic method. Metals obtained in the electric arc furnace usually contained variable amounts of iron and considerable amounts of carbon. Alloy steels with chromium not exceeding 5 per cent and manganese below 10 per cent were easily manufactured from cheap ferroalloys high in carbon. In fact, no stimulus to manufacture the metals, silicon, chromium and manganese, of approximately 98 per cent grade, existed until about 1910.

Certain successful applications of these three metals as obtained aluminothermally led metallurgists to foresee the development of much wider fields for their uses, and the problem arose of manufacturing the metals in a state nearly free from iron and carbon by the cheaper electrometallurgical process.

This problem was successfully solved, particularly by the Electro Metallurgical Co., in the United States. The demand for these technically pure metals is steadily increasing even though the actual scope of the possibilities connected with their use, particularly in the non-ferrous field, is not yet fully appreciated. The latter fact has led the author to give a brief review of the fields so far explored.

## Copper and Copper-Base Alloys

The ability of silicon to alloy easily with copper has long been known. Rudolfi, Baraduc-Miller and Sanfourche studied the constitutional aspects of the copper-silicon series. One after another they found that up to about 4 per cent silicon there are obtained alloys which are composed of grains of the same type as those of pure copper or cartridge brass; in short, alloys belonging to the so-called alpha solid solution range. All such alloys, with grains formed by a partial substitution of atoms of zinc, tin, aluminum, nickel for those of copper, show a high ductility and are particularly

suitable for various cold-shaping processes. Copper-silicon alloys are no exception in this group and up to 4 per cent silicon they can be easily cast, homogenized by a heat treatment for a few hours from 750 to 820 deg. C., hot rolled to any desirable intermediate size and cold rolled further to the finished size. The anneals last one to two hours at 500 to 700 deg., and alternate with 50 to 60 per cent reductions in the rolling operations.

From the viewpoint of the ultimate strength, wrought copper-silicon alloys are second to none of the alpha copper alloys. The mechanical properties obtained with 3.5 to 4 per cent silicon are the same as those which characterize all strong alpha range copper alloys; for instance, an 8 per cent tin bronze or a 7 per cent aluminum bronze. All three alloys show a strength of 65,000 to 70,000 lb. per sq. in. combined with 50 to 70 per cent elongation in 2 in., if properly annealed (grain size 0.07 mm.). Cold rolled to about 80 per cent reduction in cross-section, aluminum bronze and tin bronze of the compositions mentioned show a strength of 125,000 lb. per sq. in. with a Brinell hardness of about 190; the same figures can be exactly duplicated by a 4 per cent silicon bronze. The latter shares with aluminum bronze the ability to hot roll easily, while tin bronzes of the mentioned composition and strength do not lend themselves to practical hot rolling. As far as costs go, the substitution of 3.5 per cent silicon for 3.5 per cent copper either keeps the cost of the alloy the same or makes the composition cheaper. On the contrary, alloys with 8 per cent tin or 7 per cent aluminum are definitely more expensive than plain copper.

There is no doubt, of course, that copper-zinc alloys or brasses will always be cheaper than silicon bronzes. On the other hand under no conditions will they display the high strength of copper-silicon alloys nor can they be made as reliable (season cracking and corrosion pitting). In the melting of copper-silicon alloys, all silicon that happens to oxidize (and this does not usually exceed 0.15 per cent of the total charge), rises quickly to the surface in the form of silica or a silicate

\*Consulting metallurgist, 8103 Polk Avenue, Jackson Heights, N. Y. Published with the permission of the Electro Metallurgical Co., New York.

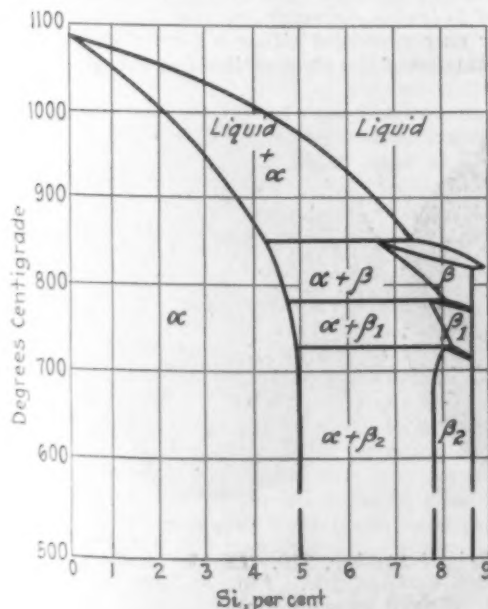


FIG. 1

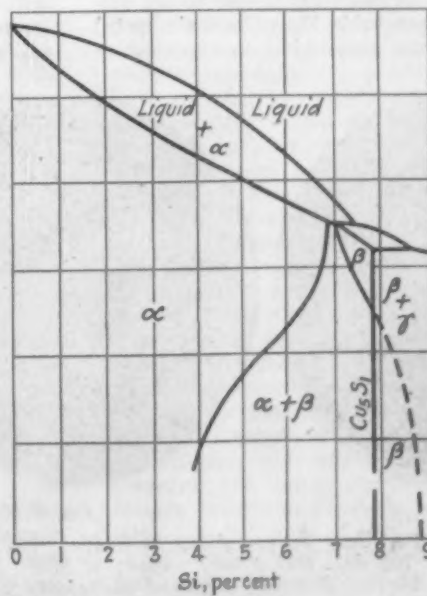


FIG. 2

Fig. 1—Part of the Constitutional Diagram of the Copper-Silicon Series by M. Sanfourche (*Revue de Metallurgie*, 1919, Vol. 16, page 246). The alpha solid solution is considered to reach its saturation limit at 5 per cent silicon, and the beta is believed to undergo two allotropic changes

Fig. 2—Same Diagram as Tentatively Proposed by the Author. The alpha varies from 3.8 to 6.7 per cent. The beta continuously transforms from the copper-rich into the silicon-rich state of the compound,  $\text{Cu}_5\text{Si}$



FIG. 3



FIG. 4

Fig. 3 (Left)—A 5 Per Cent Silicon Alloy as Rolled and Quenched from 725 Deg. C.;  $\times 70$ . Brinell number, 75

Fig. 4—Same as Fig. 3 Slowly Cooled Below 650 Deg. C.;  $\times 70$ . Brinell number, 100. Striation is due (hypothetically) to the precipitation of the  $\text{Cu}_3\text{Si}$  compound. Its large molecule makes the growth of the precipitated particles difficult

slag and has no tendency to form films within the molten mass. In addition the alloys do not show the high shrinkage of the aluminum bronzes and can be cast with hardly any trouble.

Silicon bronzes were introduced to the trade about three years ago by the Dupont Engineering Co., which manufactures the so-called "Everdur 50." This is an alloy containing a small amount of manganese in addition to 3.5 per cent silicon. Its strength and mechanical properties are almost identical with those mentioned above. The main reason for its manufacture is, however, the supplying of a material which might withstand corrosion in chemical processes to a higher degree than alloys previously available.

#### Problem of Resistance to Corrosion

Copper in itself has an enormous resistance to corrosion, provided no oxidizing agent is present. A solution of hydrochloric acid free from air and kept in the dark may be boiled with copper under high pressures for an almost unlimited time without being appreciably attacked. The reason is plain—the considerable electrochemical potential difference between copper and hydrogen always tends to keep the hydrogen in solution and to protect copper from passing into it.

As soon, however, as an oxidizing agent is present, copper becomes quite unstable and dissolves with a speed directly related to the type and amount of the oxidizing agent. A solution of hydrochloric acid containing air attacks copper quickly, and so does one containing no air but exposed to light; the latter continuously liberates a very small amount of chlorine and copper is absolutely helpless against the attack of this element.

According to the latest theories the degree of resistance to corrosion undergoes a positive change by substituting atoms of some element possessing a higher degree of corrosion resistivity for those of the main metal. This higher resistance may be of two distinct types: The substituting atoms may belong to an element which is either more noble than the main metal or one that is apt to form some kind of a protective

film. Gold, platinum and silver belong to the first class of corrosion inhibitors, but cannot be industrially used for obvious reasons. The second class embraces, in the case of copper, only a few elements which in addition exert only a comparatively weak influence.

In this respect copper is much less fortunate than iron or nickel—the latter two form, for instance, alloys with chromium or tantalum, both of which produce a strong protective film on the surface of the alloy. In addition the amount of chromium or tantalum that can be introduced into iron without making the structure duplex is rather high. Copper even when molten dissolves but little of these two metals, and even this little amount remains mainly as a separate constituent. There is practically no atomic substitution and no assistance against corrosion is obtained.

Aluminum is one of the few metals showing the ability to build up a protective film and it is also able to form an "alpha" copper alloy in which nearly 16 per cent of the atoms of copper in each grain are substituted by atoms of aluminum. This leads to a definite but not too strong protection against corrosion, particularly against sulphuric and certain organic acids, which do not easily attack the aluminum oxide film. On the other hand, aluminum oxide has no resistance whatever against hydrochloric acid and an alpha aluminum bronze shows no more stability in either hydrochloric acid or chloride containing solutions (among them sea-water) than plain copper.

#### Chemical Influence of Silicon

The chemical nature of silicon is rather complicated. Under certain conditions it is very active (burns easily in chlorine). On the other hand, even an oxygen-rich jet of the acetylene torch may be allowed to play upon the surface of a lump of silicon leaving it nearly intact. Any formation of silicon dioxide can hardly be observed in this case.

Crystalline silicon is also rather stable against the action of hydrochloric, sulphuric and other acids, which property may represent either a property of its crystalline state or of the element itself as far as we know.

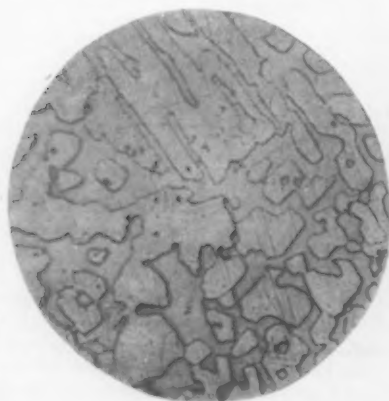


FIG. 5



FIG. 6



FIG. 7

Fig. 5 (Left)—A 6.5 Per Cent Silicon Alloy as Cast  $\times 350$ . Brinell number, 270. Fig. 6 (center)—Same as Fig. 5, annealed at 700 deg. and slowly cooled;  $\times 350$ . Brinell number, 160. Fig. 7—Same as Fig. 5, annealed at 800 deg. and quenched;  $\times 70$ . Brinell number, 130



Leaving out of consideration the unexplainable chemical stability of silicon, one sees that there exists a possibility of using silicon as a partial substitute for copper and so forming an alloy of a higher chemical stability. Here is probably the reasoning that led the engineers of the Dupont Engineering Co. to manufacture their new alloy.

For certain manufacturing reasons the makers of Everdur do not go beyond 3.5 per cent silicon. Computing the atomic composition of Everdur one finds that not even 8 per cent of the atoms of copper are substituted by silicon. This is quite a drawback inasmuch as, according to the modern hypothesis of Tamman, the resistance to corrosion is materially increased only when about 12.5, 25.0, 37.5 per cent, etc., of the atoms of the main metal are substituted by those of another. This hypothesis holds exceedingly well for the copper-nickel, and gold-silver alloys, stainless steel, high-chromium iron, nichrome, etc. It seems to hold also in the case of copper-silicon alloys.

From this point of view a rather desirable contribution to the fight against corrosion might be made by developing a workable copper-silicon alloy contain-

amount of cold work in shaping various articles, but the amount of cold work used for finishing the sheets and rods ought not to exceed a reduction of 5 to 10 per cent. Figs. 1 to 9 illustrate the constitutional and structural properties of the copper-silicon series up to 8 per cent silicon.

The actual degree of corrosion resistance of the high-silicon-copper alloy mentioned has not yet been investigated. There is no doubt, however, that it is greater than that of Everdur alloy and may exceed the majority of copper alloys suggested so far. A drawback to the silicon bronzes above 4.5 per cent silicon is their sensitiveness to heat. A quenched sheet of the 6.5 per cent silicon alloy has a Brinell hardness of 110 only. It changes to 280 on soaking for 3 hr. at 300 deg. and the sheet becomes brittle. Temperatures up to 200 deg., however, are of no influence. Engine and pump parts, also various stirring devices, hot-stamped vessels, etc., might be manufactured of this alloy.

#### Silicon-Copper Alloys for Castings

The usual cast alloys with a copper base are either of the Muntz metal (40 per cent zinc), the admiralty

Fig. 8—Same as Fig. 5 Heat Treated at 550 Deg. for 2 Hr. Following Quenching;  $\times 70$ . Shows the precipitated beta. Brinell number, 180

Fig. 9—Same Alloy Hot Rolled and Quenched from 770 Deg.  $\times 70$ . Brinell number, 110

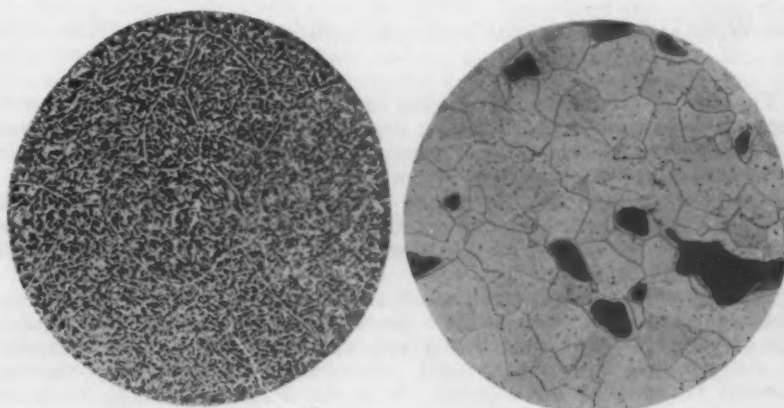


FIG. 8

FIG. 9

ing at least 6 per cent (by weight) of silicon in the alpha state. Usually when an alloy of this silicon content is cast into ingots, a coarse duplex structure is obtained. In this latter a yellow network of the ductile high-copper constituent is interwoven with a light mass of a rather high-silicon constituent, much harder and quite brittle. In this state the alloy cannot be worked by rolling and is entirely worthless from the viewpoint of corrosion resistance. Countless local currents are set up between the two constituents as soon as the alloy is introduced in a corrosive medium and the corrosion proceeds with high speed. The alloy tarnishes quickly and deeply even in ordinary air.

#### Investigation by the Author

It was found by the author that, contrary to conditions prevailing in copper alloys with zinc, tin and aluminum in which the solubility of the second metal in the grains of copper decreases with the rise in temperature, it increases with the temperature for copper-silicon alloys. At about 800 deg. as much as 6.5 per cent of silicon will be present in the alpha state. The way to handle an alloy of this kind and to turn it into sheet metal is as follows: A plate ingot is cast—preferably not exceeding 2 in. in thickness. It is sent to the annealing furnace and kept at 750 deg. for 10 hr., when the temperature is increased to 800 deg. and the alloy allowed to soak for two hours more. All the silicon goes into solid solution in the copper and the alloy becomes hot workable. The working starts with hot forging to about 30 per cent reduction and is continued with hot rolling (750 to 820 deg.) to nearly the final size. Hot rolling is completed by quick cooling (air blast or water quench). In this way an alpha type 6.5 per cent silicon-copper alloy can be obtained in the form of sheet, and particularly as extruded shapes. The hot-worked and quenched alloy shows a strength of 70,000 lb. per sq. in., a Brinell hardness to 110 and an elongation of 35 per cent. This high ductility permits one to subject the quenched alloy to a substantial

gunmetal (8 to 10 per cent tin plus a variable amount of zinc) or the 10 per cent aluminum bronze type. All of them have their advantages and drawbacks; for instance, alloys of the Muntz metal type (usually with additions of tin, manganese and aluminum) are very strong, easy to cast, reliable mechanically, but likely to corrode, and their intergranular substance is frequently not sufficiently solid to offer a complete resistance to high pressure steam. Alloys of the gunmetal type are more reliable, but have a moderate strength and are considerably higher in price. Finally, aluminum bronze castings are strong but become unreliable as soon as the cross-sectional dimensions of various parts of a casting differ enough to permit certain chemical transformations to take place, resulting in spots of a high hardness and practically no ductility whatsoever.

In certain cases copper castings are required to be as near to pure copper as possible. If cast of an actually pure copper, they are unreliable, due to unsoundness and porosity. It is a good copper casting which shows 25,000 lb. per sq. in. strength, although the strength of pure copper in the form of a uniformly grained wrought metal is 31,000 lb., at least.

The presence of small amounts of silicon relieves copper of its unsoundness, eliminates oxygen and drives off hydrogen occluded during melting. It requires not more than 1 per cent silicon to produce castings possessing the strength of copper (32,000 lb.) and a uniform elongation of about 70 per cent. The silicon treatment is cheap and the castings show little shrinkage. Their particular advantage is that neither the temperature of pouring nor the method of casting have much influence upon the strength and ductility. A sand casting poured at 1300 deg. and built up of grains 5 to 10 mm. large possesses the same mechanical properties as a chill casting poured at 1100 deg. with grains averaging 0.3 mm.

Of course this strength of 31,000 lb. (coupled with a yield point of 9000 lb. per sq. in.) is by no means satisfactory from the viewpoint of the engineer. In this

direction a further addition of silicon is helpful, although to a small degree only. With 2.5 per cent silicon a uniform strength of 36,000 lb. is obtained and it is accompanied by 50 to 60 per cent elongation in 2 in. and by 13,000 lb. per sq. in. for the yield point.

This is the usual composition of copper-silicon castings as recently introduced in the trade. A further addition of silicon up to 3 per cent and above leads to a specific type of unsoundness. The secondary constituent of copper-silicon alloys, which crystallizes mostly near the core of the casting, seems to have a temperature coefficient of expansion entirely different from that of the alpha copper-silicon alloys. Such castings high in silicon show a multitude of small shrinkage cavities at the very core.

Copper-silicon castings low in silicon display one undesirable feature; they quickly tarnish in air and become covered with a black unsightly film. The latter

is quite stable and does not increase with time. Where the appearance of the casting is of no importance and its surface does not come in contact with liquid corrosive media, this film may prove quite advantageous. Usually one demands, however, alloys not subject to pronounced tarnishing. This tarnishing can be easily overcome by making a ternary casting alloy containing small amounts of tin or zinc. An alloy with 4 per cent tin and 2 per cent silicon has almost the same properties as the alloy with 15 per cent zinc and 2 per cent silicon. The presence of silicon leads in both cases to the formation of a small amount of a secondary silicon-copper constituent, and this tends to refine the grain size of the casting. For instance, brass castings with about 15 per cent zinc are not considered reliable on account of their coarse-grained structure; they can, however, be made to satisfy quite strict requirements by the addition of the proper amount of silicon.

## IMMIGRATION SHOWS LAG

### Not Well Timed with Fluctuations in Industrial Activity

The flow of migration that sweeps into the United States in boom times and out during depressions is not well timed with the fluctuations in employment opportunities, the lag varying from a few months to one year, according to a report entitled "Migration and Business Cycles," just completed by the National Bureau of Economic Research, 474 West Twenty-fourth Street, New York.

The report contains the findings of an investigation intended primarily to deal with the shortage and surplus of labor in the United States and was initiated by the National Research Council, representing the scientific interests of the country. It is the first of what is to be a comprehensive series dealing with the general effects of migration upon the economic activities of the nation.

In general contour, the curves showing the fluctuations in male immigration and factory employment in the period from 1890 to the outbreak of the great war bear a marked resemblance, but it is pointed out that "when the two curves are closely examined to determine the extent to which the major turns in the two curves coincide, it appears that they agree most closely when it is assumed that the fluctuations in immigration lag from two to four months after the corresponding fluctuations in the employment curve."

"The cyclical movements in emigration," the report adds, "are inversely correlated with those of immigration and employment, with large emigration in depression periods and relatively small emigration in boom periods."

"The fluctuations of 'net immigration' exhibit a high degree of sensitiveness to employment conditions in the United States. This is evident when immigration and emigration are jointly considered either in terms of the ratio of emigration to immigration or in terms of the numerical excess of arrivals over departures or of departures over arrivals."

The pre-war period is more significant for the investigator's purposes, because there were at that time, on this side of the Atlantic at least, fewer legal or unusual barriers to the free flow of migration in accordance with the pull of economic motives.

The 3 per cent quota law of May, 1921, made the disentanglement of the economic trends in the subsequent period more than usually difficult. Because the quotas began to be available in July, and 20 per cent of the quota of any country could be admitted in a single month, the law has tended to concentrate the arrivals in the second half of the calendar year, thus creating a seasonal movement materially different from that characteristic of the pre-war period, and obscuring the effects of industrial prosperity and depression except for those countries which were obviously falling short of the quota or, like Canada and Mexico, were not subject to the law.

## MEDAL FOR SCIENTISTS

### Congress Urged to Pass Bill to Reward Government Workers

WASHINGTON, Feb. 1.—Declaring that republics are not only ungrateful, but indifferent as well, Representative Anthony J. Griffin of New York is urging Congress to pass a bill (H. R. 3846) which he introduced in December, 1925, providing for the Jefferson medal of honor and monetary awards to scientists in Government service for distinguished work. As pointed out by Mr. Griffin, these scientists are ridiculously underpaid for their splendid service and receive scant notice for their important achievements which are accepted in a matter-of-course fashion both by the Government itself and the people. Mr. Griffin has had brought forcibly to his attention the lack of reward which the Government scientist obtains. His position as a member of the House Committee on Appropriations has brought him into direct contact with the situation.

In an interview with *THE IRON AGE*, Mr. Griffin said:

The initial impetus that I received in the direction of devising some means of rewarding and assisting scientific workers in the Federal employ came during the progress of hearings before the appropriations committee of the House of Representatives. I was amazed at the salaries paid to scientific workers which, compared to the compensation earned for similar work in the great steel and other industries, seemed wholly inadequate. In the Bureau of Standards there are scientific workers who could easily command salaries double that which the Government allows them.

A particular instance of devotion to duty which made a deep impression upon me was the work of two men in the Coast and Geodetic Survey, who worked for 15 years in devising and constructing the wonderful tide-predicting machine which does the work of from 75 to 100 mathematicians, saving the Government \$150,000 a year. It has been in operation for 15 years and in that time I figure it has saved the Government \$2,640,000 in salaries. Yet the men who devoted themselves to this splendid work received only \$2,400 per year. It is my purpose in this bill specifically to render aid to such persons.

The bill provides for a medal of honor and a cash grant of from \$100 to \$500 a year. It is hoped in this way to enable them to piece out their meagre incomes and give them some encouragement in the way of honors for their devotion to science and their loyalty to the Government. The bill provides only for five such medals per year and the tax on the Government treasury would involve not more than \$2,500 per year. The amount provided in the bill to inaugurate this work is only \$1,500 and it is discouraging to find Congress so hopelessly indifferent.

Scientific men all over the country have signified their approval of this proposition. Other governments accord such honors and emoluments to their scientific pioneers and discoverers—why not the United States?

The Morgan Construction Co. has received a contract from the Ford Motor Co. for an additional mill to be erected at the River Rouge plant. The mill will be of the merchant type, and is designed to produce from 12,000 to 15,000 tons a month.



# Exports and Imports Higher in 1926

## Outgoing Iron and Steel Movement Heaviest Since 1921—Imports Greatest in 23 Years

WASHINGTON, Jan. 31.—The strides Germany has made in recovering markets of the world in iron and steel are reflected in the leading position that country took in 1926 in supplying the United States in its import movement. Of the total imports of 1,111,090 tons received in this country last year, the highest quantity for any year since 1903, when the total was 1,719,548 tons, Germany provided 270,769 tons. This compares with 105,094 tons in 1925. Except for January, February, April and November, Germany was the greatest source of importation of iron and steel products during each month of the year. Of the quantity coming from that country, 156,319 tons was pig iron, which also represented the greatest amount coming from any single country. Other important tonnages coming from Germany during the year included 21,577 tons of structural shapes and 15,842 tons of steel bars, and lots covering miscellaneous lines, such as hoops, bands and plates.

Of the 75,559 tons of iron and steel products imported in December, 21,044 tons came from Germany, while Belgium ranked second, with 18,140 tons. Of the 14,783 tons of pig iron imported in December, 10,218 tons came from Germany. Norway was the greatest source of imports of ferromanganese, providing 4107 tons of the total of 7411 tons imported, while Canada supplied 3219 tons. Of the 6324 tons of steel

bars imported during that month, 3439 tons came from Belgium, 1106 tons from Germany, 729 tons from France and 635 tons from Sweden.

Belgium led as the source of imports of hoops and bands in December, supplying 1158 tons of the total of 2885 tons imported. Germany was second with 1022 tons, and the Netherlands third with 485 tons. Belgium also ranked first as the source of imports of shapes, both during December and for the year 1926, furnishing 7921 tons for the month out of a total of 10,454 tons; for the year Belgium supplied 85,177 tons out of a total of 121,099. Imports of shapes from Germany in December amounted to 1880 tons, while France sent 449 tons. Of the 12,094 tons of cast iron pipe imported in December, 8209 tons came from France and 3863 tons from Belgium.

As pointed out in THE IRON AGE of Jan. 27, page 308, Canada, as usual, continues to be the leading destination of exports of iron and steel products, taking 833,763 tons last year, while the total exportation was 2,167,048 tons, which represented the highest export movement of American iron and steel products for any year since 1921, when the total was 2,209,864 tons. Exports to Canada during 1926 exceeded by 219,102 tons the movement to that country in 1925, when the total was 614,661 tons. In December, 1926, Canada took 52,203 tons out of the total of 198,189 tons.

### Exports of Iron and Steel from the United States

	(In Gross Tons)		Twelve Months	
	December		Ended December	
	1926	1925	1926	1925
Pig iron.....	2,651	2,626	25,208	32,674
Ferromanganese .....	50	40	682	5,496
Scrap .....	7,711	3,705	104,647	82,573
Pig iron, ferroalloys, and scrap .....	10,412	6,371	130,537	120,743
Ingot, blooms, billets, sheet bar, skelp....	5,918	10,448	100,956	87,478
Wire rods .....	2,795	1,834	19,646	21,203
Semi-finished steel....	8,713	12,282	120,602	108,681
Steel bars .....	10,952	9,859	137,770	111,948
Alloy steel bars.....	341	567	4,946	3,691
Iron bars .....	374	263	5,171	4,615
Plates, iron and steel	8,806	9,933	138,258	104,450
Sheets, galvanized....	17,163	12,410	178,636	160,270
Sheets, black steel....	19,545	11,357	175,640	95,431
Sheets, black iron....	2,790	1,854	19,425	14,768
Hoops, bands, strip steel .....	3,135	4,055	46,833	40,933
Tin plate; terne plate	31,735	13,001	250,736	161,383
Structural shapes, plain material .....	10,617	9,640	157,121	104,339
Structural material, fabricated .....	6,843	6,954	77,808	73,460
Steel rails.....	19,445	4,820	187,760	151,690
Rail fastenings, switches, frogs, etc.	2,853	1,843	41,768	35,367
Boiler tubes, welded pipe and fittings....	32,106	18,187	287,770	239,670
Plain wire .....	1,878	2,770	31,311	35,596
Barbed wire and woven wire fencing .....	1,591	5,873	50,718	71,115
Wire cloth and screening .....	176	197	1,989	1,951
Wire rope and cable..	333	315	4,779	4,369
Wire nails .....	628	944	11,743	9,837
Other nails and tacks	530	852	7,924	9,229
Horseshoes .....	34	85	661	706
Bolts, nuts, rivets and washers, except track .....	925	1,479	13,220	16,956
Roller and finished steel .....	172,800	117,258	1,831,992	1,451,774
Cast iron pipe and fittings .....	3,201	2,853	34,120	32,193
Car wheels and axles	675	1,103	16,644	19,936
Iron castings.....	406	823	8,837	10,412
Steel castings.....	555	265	7,564	4,209
Forgings .....	144	109	2,644	2,170
Castings and forgings	4,981	5,154	69,819	69,920
All other.....	1,283	1,144	14,093	12,453
Total.....	198,189	142,209	2,167,048	1,762,571

### Imports of Iron and Steel Into the United States

	(In Gross Tons)		Twelve Months	
	December		Ended December	
	1926	1925	1926	1925
Pig iron.....	14,783	53,333	445,602	441,425
Ferromanganese(a) ..	7,411	7,560	43,684	75,724
Ferrosilicon .....	1,341	143	13,125	4,555
Scrap .....	6,407	10,418	86,896	99,315
Pig iron, ferroalloys and scrap.....	29,942	71,454	589,307	621,519
Steel ingots, blooms, billets and slabs....	1,675	1,635	30,749	27,033
Iron blooms, slabs, etc.	25	.....	348	.....
Wire rods .....	868	656	10,074	7,989
Semi-finished steel....	2,568	2,291	41,171	35,072
Rails and splice bars	982	244	62,776	26,871
Structural shapes....	10,454	3,795	121,099	77,293
Boiler and other plates	795	24	4,946	318
Sheets and saw plates	1,615	455	10,671	3,663
Steel bars.....	6,324	6,504	104,580	58,811
Bar iron.....	590	823	6,529	11,738
Hoops, bands and cotton ties.....	2,885	.....	28,407	.....
Tubular products (wrought) .....	5,318	11,803	31,081	83,864
Nails, tacks, staples...	456	210	5,354	2,758
Tin plate .....	70	56	2,161	383
Bolts, nuts, rivets and washers .....	4	1	360	105
Round iron and steel wire .....	506	242	4,330	4,053
Barbed wire.....	206	.....	3,056	.....
Flat wire; strip steel	187	204	4,135	2,190
Steel telegraph and telephone wire....	3	.....	1,128	.....
Wire rope and strand	61	123	2,492	2,127
Other wire.....	7	.....	1,485	.....
Wire cloth and screening .....	107	.....	420	.....
Roller and finished steel(b) .....	30,570	24,499	394,900	233,874
Cast iron pipe.....	12,094	(c)	83,873	(c)
Castings and forgings	385	165	2,738	2,975
Horseshoes .....	.....	.....	1	.....
Total .....	75,559	93,400	1,111,090	948,240
Manganese ore(a) ...	26,971	26,908	854,223	265,888
Iron ore .....	205,035	240,049	2,555,441	2,190,697
Magnetite (dead burned) .....	911	1,910	67,596	77,290

(a) Manganese content only. Shipments of ore from Cuba, which are stated in gross weight, amounted to 175 tons in December, 1926.

(b) Prior to January, 1926, this includes some cast iron pipe, under the heading "tubular products."

(c) Included under "tubular products."

Japan was second in taking American iron and steel exports, both in December and in the year 1926, taking 32,806 tons and 260,362 tons respectively. Exports to Japan last year were almost double those of 1925, when the total was 132,891 tons. American exports to the South American countries and to the Far East in 1926 showed notable gains over the 1925 movements.

Japan was the leading purchaser of American rails, black steel sheets and tin plate in December, 1926, and for the entire year. Rail shipments to Japan in December and during the 12 months were 6143 tons and 34,378 tons respectively; of black steel sheets, 10,214 tons and 88,796 tons; and of tin plate, 7446 tons and 49,062 tons.

#### Sources of American Imports of Iron Ore

	(In Gross Tons)		Twelve Months Ended December	
	December			
	1926	1925	1926	1925
Spain .....	1,196	20	83,608	144,421
Sweden .....	14,114	20,324	53,605	141,324
Canada .....	556	494	16,984	7,829
Cuba .....	50,000	62,500	539,000	535,130
Chile .....	111,000	142,000	1,364,400	1,113,900
French Africa .....	15,900	13,075	321,745	173,070
Other countries .....	12,269	1,636	176,099	75,023
Total .....	265,035	240,049	2,555,441	2,190,697

#### United States Imports of Pig Iron, by Countries of Shipment

	(In Gross Tons)		November	
	December			
	1926	1925	1926	1925
United Kingdom .....	40	20,148	4	8,325
British India .....	203	13,552	1,879	12,567
Germany .....	10,218	9,200	9,701	3,550
Netherlands .....	3,699	6,075	2,955	8,991
Canada .....	48	662	530	429
France .....	1,400	1,116	100	100
Belgium .....	2,030	1,350	600	600
All others .....	575	266	25	150
Total .....	14,783	53,333	17,560	34,712

#### Destination of Iron and Steel Products Exported from the United States

Country of Destination	(In Gross Tons)		January Through December	
	December, 1926		1926	
	1926	1925	1926	1925
<i>North and Central America and the West Indies</i> .....	74,781	1,107,848	944,459	
Canada and Newfoundland .....	52,279	834,758	616,362	
Cuba .....	10,746	94,730	146,823	
Mexico .....	6,627	100,791	102,412	
Guatemala .....	266	10,125	7,600	
Salvador .....	423	16,277	15,393	
Panama .....	955	9,015	14,625	
British West Indies .....	1,284	10,579	9,862	
Other West Indies .....	1,241	17,271	16,458	
Other Central America .....	960	14,294	14,924	
<i>South America</i> .....	46,418	373,085	319,563	
Argentina .....	6,450	60,105	87,296	
Brazil .....	9,687	62,542	46,016	
Chile .....	5,318	61,642	44,940	
Colombia .....	10,419	71,128	77,336	
Peru .....	2,931	37,819	17,895	
Venezuela .....	10,310	68,116	35,231	
Other South America .....	1,303	11,733	10,849	
<i>Europe</i> .....	17,590	144,131	143,296	
France .....	1,459	10,393	9,047	
Italy .....	789	23,486	41,767	
Rumania .....	170	2,591	1,995	
Russia .....	203	3,073	3,562	
Turkey .....	19	3,032	1,827	
United Kingdom .....	10,275	68,765	52,261	
Other Europe .....	4,725	32,791	32,837	
<i>Far East</i> .....	58,654	523,832	327,182	
Australia .....	6,289	33,353	22,543	
British Malaya .....	1,500	15,520	6,719	
China .....	6,669	46,054	56,816	
Dutch East Indies .....	3,704	41,024	25,194	
India .....	1,661	37,097	25,750	
Japan and Chosen .....	32,806	260,362	132,891	
Kwangtung .....	246	20,249	1,802	
Philippine Islands .....	3,949	57,554	46,896	
Other Asia and Far Eastern markets .....	1,810	12,619	8,571	
<i>Africa</i> .....	766	18,160	28,072	
British South Africa .....	495	9,393	23,208	
Egypt .....	173	5,761	3,314	
Portuguese East Africa .....	4	2,299	981	
Other Africa .....	94	707	569	

#### Imports of Iron and Steel Products Into the United States by Countries of Origin

From:	(In Gross Tons)		January through December	
	December, 1926		1926	
	1926	1925	1926	1925
Austria .....	67	794	200	
Belgium .....	18,140	230,852	168,990	
Czechoslovakia .....	476	2,230	2,529	
Denmark .....	2,409	2,409	71	
France .....	10,354	131,894	86,539	
Germany .....	21,044	270,769	105,094	
Italy .....	139	1,041	322	
Netherlands .....	5,226	91,431	66,934	
Norway .....	4,132	19,282	8,359	
Spain .....	1	3	203	
Sweden .....	2,767	28,297	31,911	
Switzerland .....	1	51	169	
United Kingdom .....	1,912	125,622	155,487	
Canada .....	9,929	93,256	84,774	
Panama .....	7,748	7,748	7,748	
Mexico .....	70	8,131	1,420	
British West Indies .....	2	405	379	
Cuba .....	1,061	10,418	32,487	
Chile .....	11	11	117	
India .....	203	81,938	185,349	
China .....	10	10	263	
Hongkong .....	1	1	301	
Japan .....	1	22	59	
Java .....	1	1	44	
All others .....	34	4,474	11,179	
Total .....	75,559	1,111,090	943,240	

#### Imports of Iron and Steel in Gross Tons

	Total Imports	Pig Iron	Ferro-alloys	Manganese Ore and Oxide*
Calendar year 1924 .....	556,814	209,109	59,910	255,157
January, 1925 .....	77,105	41,344	7,165	15,498
February .....	92,353	47,803	10,997	9,666
March .....	92,115	50,803	5,691	24,330
April .....	71,233	33,299	7,699	14,941
May .....	67,789	21,260	8,721	29,139
June .....	82,853	35,657	4,259	20,720
Fiscal year 1925 .....	749,393	325,199	77,291	186,939
July .....	64,642	24,881	3,601	28,586
August .....	68,489	30,707	3,526	34,168
September .....	68,445	29,917	3,594	22,709
October .....	80,045	37,709	11,226	23,054
November .....	79,771	34,712	6,173	38,238
December .....	98,400	53,333	7,708	36,908
Calendar year 1925 .....	943,240	441,425	80,269	265,688
January, 1926 .....	79,067	48,425	3,055	37,498
February .....	100,273	59,122	6,194	27,239
March .....	93,107	54,825	4,606	27,391
April .....	107,636	54,359	6,949	59,666
May .....	108,731	57,211	3,002	21,633
June .....	124,215	63,106	5,277	31,315
Fiscal year 1926 .....	1,080,781	528,305	64,106	288,407
July .....	82,411	32,206	1,702	34,133
August .....	91,678	26,538	4,611	41,075
September .....	85,484	17,508	2,525	18,167
October .....	81,830	18,847	4,879	13,331
November .....	81,259	17,560	6,057	20,091
December .....	75,559	14,783	8,752	26,971
Calendar year 1926 .....	1,111,090	445,602	56,809	354,223

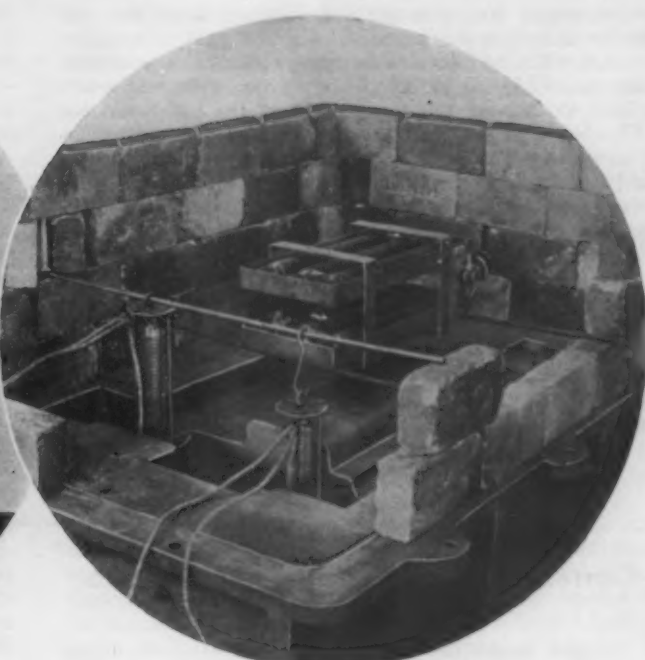
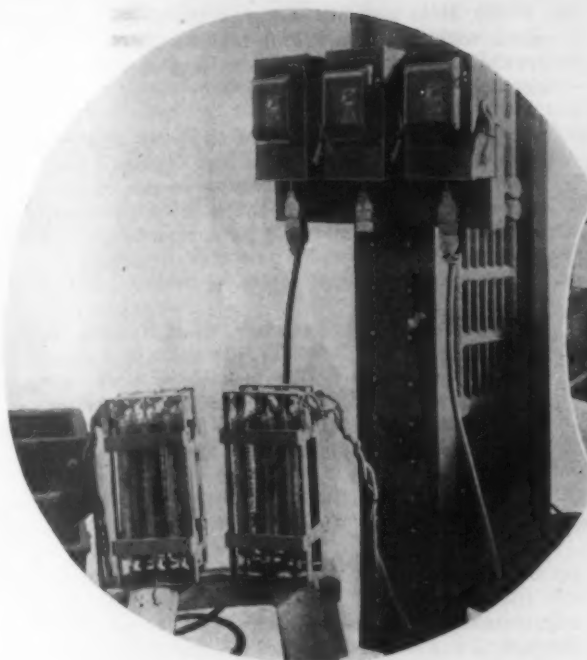
\*Not included in "total imports." These figures are for manganese contents of the ore.

#### Exports of Iron and Steel in Gross Tons

	All Iron and Steel	Pig Iron	Semi-Finished Material
*Average, 1912 to 1914 .....	2,406,218	221,582	145,720
*Average, 1915 to 1918 .....	5,295,333	438,462	1,468,020
*Average, 1919 to 1923 .....	3,078,724	123,837	149,218
Calendar year 1924 .....	1,805,073	41,478	114,417
January, 1925 .....	141,777	1,298	5,764
February .....	102,299	1,413	7,516
March .....	155,384	2,037	7,951
April .....	155,375	1,632	6,831
May .....	150,612	2,316	7,360
June .....	136,847	2,507	7,804
Fiscal year 1925 .....	1,663,084	29,563	107,988
July .....	139,861	2,348	10,701
August .....	188,465	5,944	8,024
September .....	136,791	3,349	8,186
October .....	141,817	2,874	8,432
November .....	171,134	4,272	16,783
December .....	142,209	2,626	12,282
Calendar year 1925 .....	1,762,571	32,674	108,681
January, 1926 .....	174,585	1,663	4,388
February .....	157,187	1,478	5,615
March .....	169,438	1,489	6,050
April .....	194,449	2,010	7,167
May .....	173,418	1,107	9,880
June .....	159,506	1,369	5,714
Fiscal year 1926 .....	1,948,860	30,587	103,271
July .....	194,717	2,595	14,558
August .....	171,588	2,744	14,437
September .....	182,071	2,173	12,569
October .....	172,070	2,205	12,983
November .....	219,830	3,724	17,528
December .....	198,189	2,651	10,412
Calendar year 1926 .....	2,167,048	25,208	120,602

\*Calendar years.





## DRIES MOLDS BY ELECTRIC HEAT

Method of Machine Tool Builder Permits Making and Drying Mold and Pouring in One Day

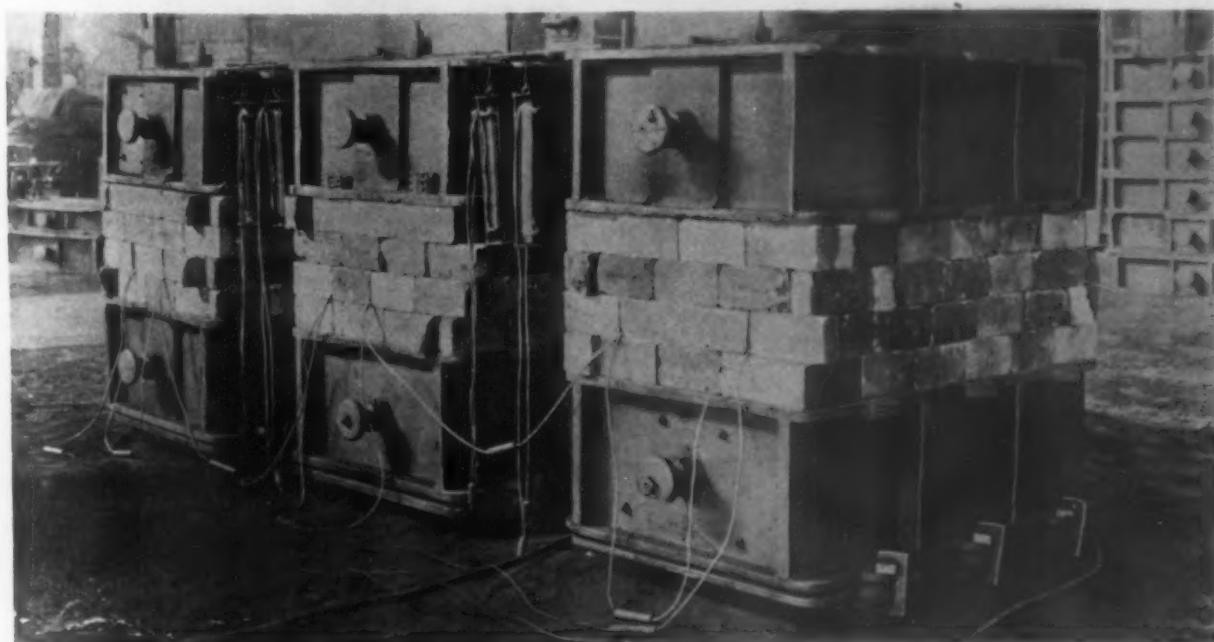
THE practice of the Gleason Works, Rochester, N. Y., in the drying of molds electrically, and some of the advantages of the electric heat process are told in the following abstract of a short article by Frank C. Taylor in the November, 1926, issue of *Gas and Electric News*, published by the Rochester Gas & Electric Corporation, Rochester, N. Y.

Brief reference is made to the drying of molds by placing them in ovens; by playing the flame of a gas torch over the surface of the mold; by the use of salamanders; and by the use of a gas-fired heater and fan blower placed externally to the mold. The use of electric heaters for the purpose is then outlined by Mr. Taylor.

Some time ago the Gleason Works made an inves-

tigation to discover the best method for drying molds. During the course of this investigation electricity was suggested and after some experimenting, the Gleason company found that not only could electricity be used for drying the molds, but apparently it was the best source of heat to use for this purpose.

The heaters used in electrically drying the molds are approximately 18 in. long and 1½ in. in diameter. For normal use six of these heaters are tied together in an iron frame and operated in series on 230 volts, alternating current, taking approximately 32 amperes, or a total kilowatt capacity of 7.36 kw. Current is supplied to the heaters through asbestos covered wire connected to a two-wire rubber-covered cable and connection is made to the supply by means of a Kliegl, 50-amp. two-wire stage plug, in turn connected to a 60-amp. two-wire Trumbull safety switch. Ordinarily one of these six unit heaters is suspended from rods placed on top of the mold, resting upon the flask. No part of the heater is in contact with the mold; consequently no damage is done to the surface. In some cases, where the mold is particularly deep at a certain



Molds Being Dried Electrically at Plant of Gleason Works. The heaters as they appear in the molds, with single units placed in deep parts of the mold, are seen at the right at top of page. The heaters, Kliegl plugs and safety switches are shown in the left-hand illustration at top of page

point, single heater units are dropped down into the cavity to insure dryness.

After the heaters are in place, electrical connections are quickly made by means of plugs; then bricks are placed on top of the lower half of the mold and the upper half of the mold placed on top of these bricks. The separation of the upper and lower halves of the mold gives more room for the electrical heating unit, room for the asbestos wires, and finally affords an outlet for the moist air and an inlet for the dry air from the room.

For a flask 48 in. wide, 48 in. long and 36 in. deep, it is ordinarily necessary to have the heat on one of these heaters for from two to four hours in order to dry the mold sufficiently. Translating this into kilowatt-hours, from 15 to 30 kwhr. are required to dry a mold of this size. The advantages of this method are:

(1) The flask does not have to be moved after the pattern is removed.

(2) It is possible to spray the surface of the mold with plumbago and talc so that it is extremely smooth and gives excellent surface to the casting.

(3) The even strength of the mold, due to the even drying, gives a casting but slightly different from the pattern. This results in less chipping, and easier painting. In the case of painting, if the surface is rippled it is necessary to fill in the casting with filler which is softer, of course, than the iron and may ultimately be broken off.

(4) A mold may be made, dried and the casting made in one day. This results in a saving of floor space and makes possible a day's saving on rush work. Electricity for this use is eminently fitted since it can be applied just where desired and by using the unit system, in just the amount desired.

### Centerless Feed Polishing Machine for Cylindrical Work

A new centerless feed polishing machine, designed primarily for cylindrical work but adapted also for the hand polishing of flat and other shapes, is shown in the illustration.

The machine has been placed on the market by the Production Machine Co., Greenfield, Mass., and in principle is similar to that of the company's type A polishing machine. The new machine is more substantial and incorporates refinements intended to facilitate operation and adjustment and add to the life of the machine, as well as lessen the operating cost.

An outstanding individual feature is the patented centerless feed, which is said to extend the field of usefulness of this type of polishing machine. With other fixtures and devices recently developed for use in connection with centerless polishing, this type of machine is said to be adapted for work ranging from coarse cleaning or finishing to the finest of lapping and polishing, buffing, coloring, etc., of pieces of iron and steel, brass, aluminum, copper, wood, rubber, celluloid, fiber and various compositions.

The new feed consists of an endless belt driven

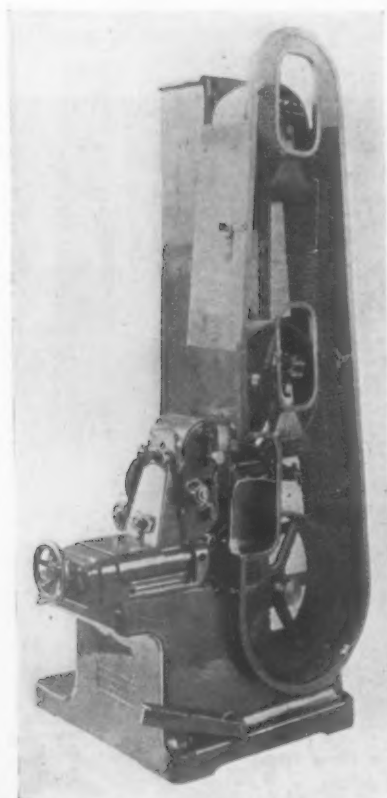
from the main shaft below. Provision has been made for tilting the feed unit for more or less feed, the adjustment for various diameters being controlled through a conveniently located hand-wheel. The work rest is connected with the adjusting mechanism so that the rest always assumes the same relative position whether the work is  $\frac{1}{4}$  in. or 6 in. in diameter. This feature is stressed as tending to make the setting-up of the machine foolproof. The polishing belt is brought into action on the work by means of a foot lever which operates the pressure platen back of the belt. The platen is independently adjustable and may be changed to suit various kinds of work.

The base and column is more rugged than previously and the main drive has been incorporated in the base. Ball bearings are used throughout. A new tension device has been developed which is an improvement over that previously employed. The device for changing the track of the belts is controlled by two hand-wheels on each top and center pulley, one hand-wheel making the adjustment and the other locking the screw. The shafts on which these pulleys operate have a locking movement to give the necessary adjustment. The yokes carrying these pulleys have been made a part of the slide.

This machine operates with an abrasive belt 6 in. wide and 14 ft. in length and the range of diameters includes  $\frac{1}{4}$  in. up to 6 in. A 10-hp. motor is employed for the drive. The machine may be equipped with a motor platform and flexible coupling applied to the main drive shaft in place of the usual tight and loose pulleys.

### Double-Spindle High-Speed Hydraulic Broaching Machine

High production is claimed for the Twin-Ten hydraulic broaching machine, a double-spindle unit, which is being placed on the market by the Oilgear Co., Mil-



*Patented Centerless Feed Is a Feature. Range of work ranges from coarse cleaning and finishing to fine lapping, polishing, buffing, etc., of parts of various materials*



*Double-Spindle Broaching Machine for High Speed Broaching of Work of Small and Medium Size*



waukee. The machine is arranged so that while one spindle is on the working stroke the other spindle is on the return. It is pointed out by the makers that this arrangement, coupled with the high speed operation of the Oilgear principle, has shown that the production with the new machine is limited by the speed of the operator rather than by the speed of the machine.

The normal pulling capacity of the machine is 10,000 lb., and the peak pulling capacity, 12,000 lb. The stroke is adjustable from 6 in. to 36 in. and the speed is adjustable from 48 in. to 360 in. per min. As

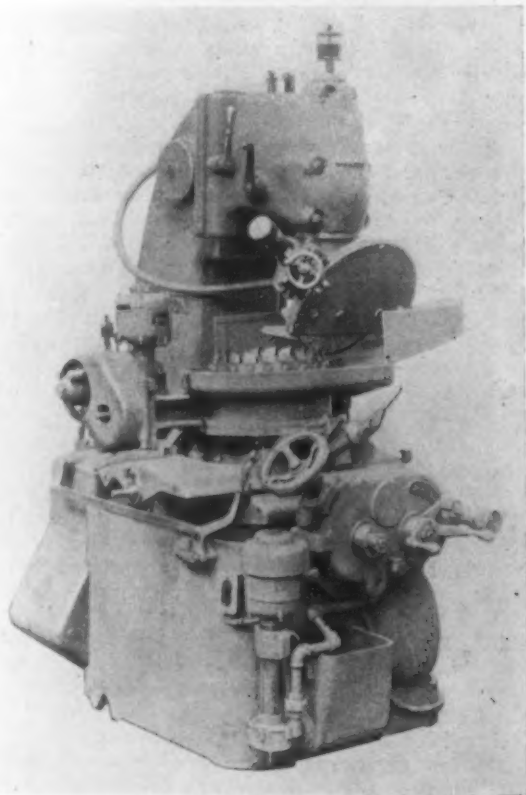
the specifications indicate, the machine is especially adapted to high speed broaching of small and medium size pieces. It is claimed to be capable of making about 500 36-in. strokes per hour or 900 18-in. strokes per hour.

Both hand and foot-pedal control are provided. The oil pressure is obtained from an Oilgear type W pump, which is an integral part of the machine and which may be driven by belt from a lineshaft or belted to a motor of required speed and power. The weight of the machine is 3000 lb. net, and the floor space occupied is 32 x 120 in.

### Spiral Bevel Gear Cutter Sharpener

The Gleason Works, Rochester, N. Y., has brought out a 12-in. automatic wet cutter grinder for sharpening spiral bevel gear cutters.

In this machine power for driving the grinding wheel and table, index, and water pump is supplied by three separate motors. Grinding is done by the conical



12-In. Automatic Spiral Bevel Cutter Sharpener. More gears per grind and operation of two machines by one man are advantages claimed

cal side of a 14-in. wheel, which is carried on a ball-bearing mounted spindle. Spiral bevel gears transmit the power to the wheel spindle from a vertical shaft having a belt drive from a 3-hp. motor mounted in the base of the machine. A ¼-hp. built-in type motor is used for operating the index and a second ¼-hp. built-in type motor drives a pump, which is of 12 gal. per min. capacity.

The cutters are rough sharpened by taking 12 grinding cuts in quick succession on each blade. Fifteen seconds' time is required for this before the index operates to place the next blade in position. During the indexing, the table is automatically moved back 0.012 in. so that each succeeding blade is presented to the wheel from the same starting position. The indexing mechanism is of the stop wheel type and turns the work the correct amount for cutters having both inside and outside blades or for cutters having either all inside or outside blades. After the rough sharpening, a clutch is shifted to engage a different part of the feed cam, so that instead of 12 cuts being taken across each blade, the cutter passes across and back once, then indexes and feeds in approximately 0.001 in.

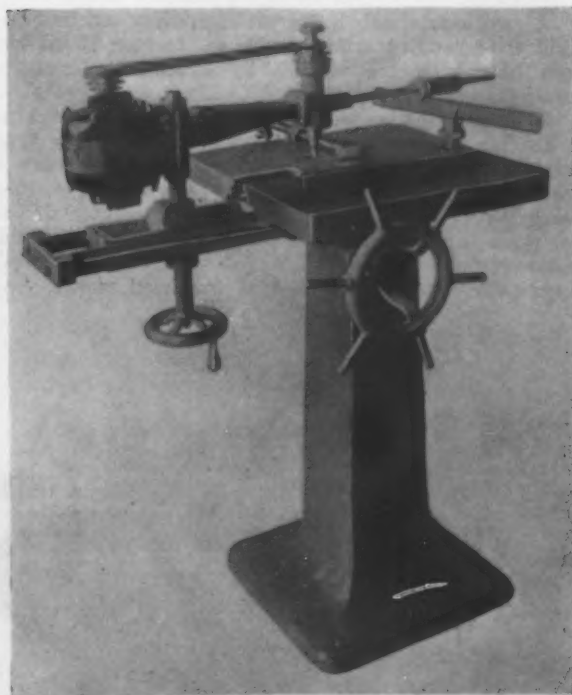
Grinding on the conical side of the grinding wheel gives a line contact which prevents unnecessary burning of the blades. Because of the means provided for dressing the wheel and also because the feed of the work is moderate, fine finish of the work is said to be obtained. The line contact principle is the same as universally used in sharpening hobs.

The cutter holder is adapted for three sizes of cutters, 6, 9, and 12 in., in diameter. It has a cradle base for tilting to different angles as required for sharpening cutters of different blade angles. By means of graduated dials, the table is offset so that together with the tilting of the cutter, the exact location is obtained for accurate sharpening.

The advantages looked for in this machine are more gears per grind of cutter since there is less chance for burning the blades, less waste in grinding away of cutting tools, and the possibility of one man operating two machines.

### Machine of Profiler Type for Use in Die Making and Other Work

A machine of profiler type but differing from the standard profiler in that the spindle is on the end of a swinging arm and is free to move over any part of the table, has been brought out by the Oliver Instru-



The Machine Is Intended for Use in Punch, Die and Pattern Making and in Cam Cutting. Operations may be performed either free hand or with template

ment Co., Adrian, Mich. On this machine the work is clamped rigidly and the cutter is guided by hand. The cutting is done by end mills, formed cutters or rotary files, which are held by means of a spring collet.

The arrangement of the machine may be noted from the illustration. The swinging arm which supports the spindle has a limited vertical movement to

permit the cutter to be raised over the work to enter an opening in the center. A fixed stop is provided on the arm so that the cutter spindle will always be vertical when the arm is down. Further vertical adjustment of the spindle, to adapt the machine for various thicknesses of work, is obtained by means of the supporting screw.

The spindle is guided and held rigidly to the work by the round rod extending from the swinging arm and by the hand wheel on the front of the machine. The hand wheel traverses a carriage, through rack and pinion, which carriage supports the vertical adjusting screw which, in turn, carries the swinging arm and motor. The rod extending from the swinging arm has on it a knurled "grip" which is arranged to slide on the rod. The grip is equipped with a pinion mounted between two collars and the pinion is arranged to engage in the rack attached to the table as shown. When the direction of cut is at right angles to the arm, movement of the arm is prevented by grasping the knurled grip, the pull of the cutter then coming against the rack teeth.

The hand wheel controlling the traverse of the carriage can be attached at either side of the machine to suit a right or left hand operator. The spindle is hardened and is equipped with large ball bearings. It is claimed that because of the rigid construction of the spindle and supporting members and the positive control provided, heavy cuts can be taken on the machine.

#### Machine Intended for Variety of Work

The machine is intended for use in making drop-forged dies, die-cast dies and bakelite dies; metal patterns, and cams. It is also for use in engraving, embossing, profiling, either horizontal or vertical, or a combination of both, stencil cutting and routing.

### Completely Motor-Driven Universal Grinding Machine

A self-contained universal grinding machine in eight sizes ranging from 12 x 24 in., to 16 x 72 in., has been placed on the market by Cincinnati Grinders, Incorporated, Cincinnati.

In dimensions, as well as in range, the new machine is similar to the company's countershaft-drive type universal grinder previously offered, but three motors are employed. One motor drives the headstock, another the grinding wheel spindle and a third motor drives the work table and coolant pump. In addition to the motor equipment, the making of work speed changes electrically, and the absence of overhead works, fea-

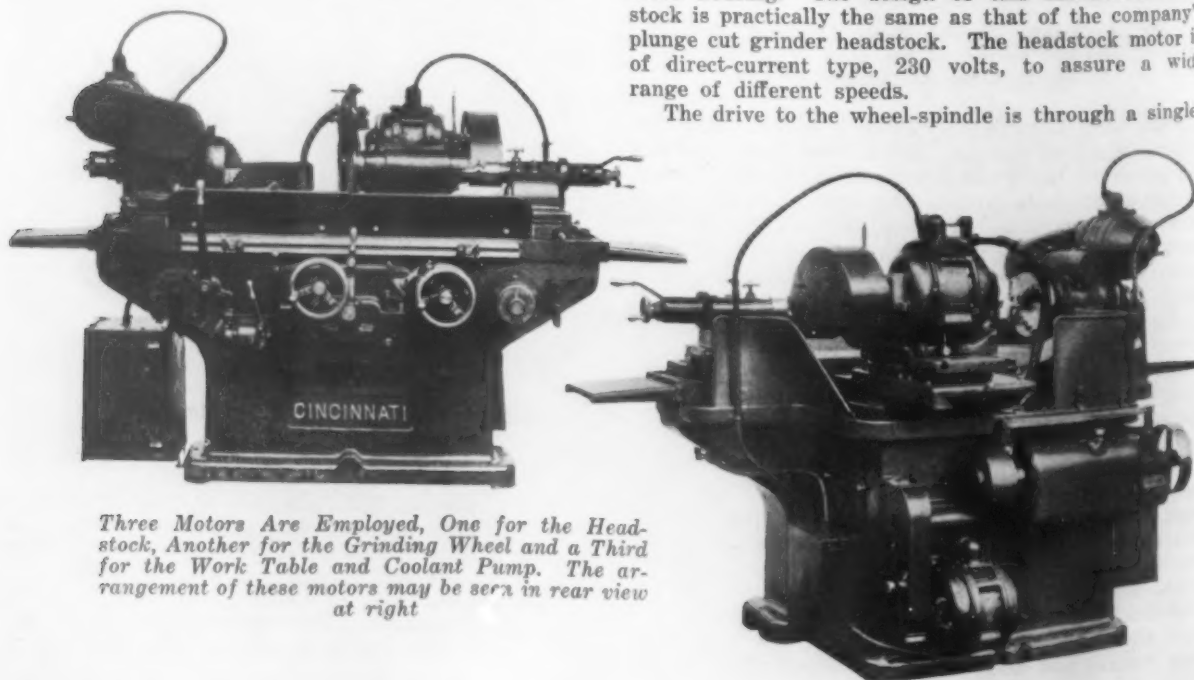
tures of the machine include sliding gears for changing table traverse speeds, sensitive cross-feed and centralized control.

The drive to the headstock is by means of a  $\frac{3}{4}$ -hp. 600 to 1800 r.p.m. adjustable-speed motor mounted in the headstock housing. The drive to the headstock plate is by means of a silent chain and worm, a sprocket on the motor shaft transmits power by means of the silent chain to the sprocket fixed to the worm shaft. The worm, in turn, transmits power to the worm-wheel to which the drive plate is fastened. The worm-wheel is partly submerged in oil and as it revolves carries the lubricant to the worm which drives it. Provision for taking up the chain for wear is made in endwise adjustment of the motor frame on the headstock housing. The design of this motorized headstock is practically the same as that of the company's plunge cut grinder headstock. The headstock motor is of direct-current type, 230 volts, to assure a wide range of different speeds.

The wide range of work accomplished by the machine requires spindle speeds varying from 800 to 8000 r.p.m. The spindle is equipped with a cone giving speeds of 800, 1600 and 2400 r.p.m. and for higher speeds a different motor pulley is used. The spindle serves an area of approximately 12 x 20 in. The table is 22 x 22 in., and is mounted on a pedestal 36 in. from the floor. The floor space occupied by the machine is 2 x 3 ft., and the weight is 375 lb.

tures of the machine include sliding gears for changing table traverse speeds, sensitive cross-feed and centralized control.

The drive to the wheel-spindle is through a single-



Three Motors Are Employed, One for the Headstock, Another for the Grinding Wheel and a Third for the Work Table and Coolant Pump. The arrangement of these motors may be seen in rear view at right



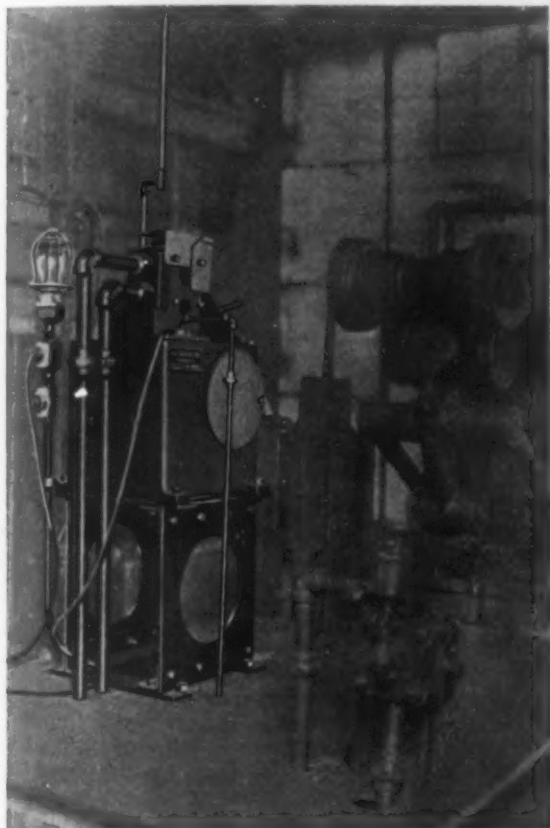
speed 5-hp. motor, 1700-r.p.m. The connection between the motor and the pulley on the wheel spindle is by an endless belt which runs over an idler with spring tension to compensate for belt stretch. The drive to the speed-change box for the work table traverse and to the coolant pump is by means of a 1-hp. constant-speed 1150-r.p.m. motor.

While the headstock motor must invariably be of the direct-current type, in 230 volts, the other two motors, for the wheel spindle and the table and coolant pump, can be of the d.c. or a.c. For cases where a

230-volt direct current is not available, the machine may be equipped with a small direct-current generator, which is mounted at the rear of the machine, and is driven direct by a shaft and coupling from the motor which serves to drive the table gear box and coolant pump. When a generator is supplied, a larger motor than that regularly specified is supplied for the driving of the table and pump; in this case there is used a 1½-hp. motor for driving the generator and table and pump. The net weight of the machine, with all motors, ranges from 5400 to 7560 lb.

### Timing Valve Designed to Assure Tight Rivets

Automatic control of the time during which the full tonnage of a riveter remains on a rivet after it has been driven is the function of the timing valve



*Timing Valve for Determining and Maintaining the Proper Dwell to Assure Tight Rivets on Various Riveting Jobs*

here illustrated, which has been brought out by the Hanna Engineering Works, 1765 Elston Avenue, Chicago. The device is intended to eliminate the human element as a factor affecting the quality of rivets driven hot in a compression type riveter and therefore assure uniformity of the product.

In driving rivets, particularly of boiler quality, the full tonnage of the riveter is maintained on the rivet after its driven head is formed, until the rivet cools sufficiently to recover its full cold strength, fill the hole and grip the plates tightly. The time for adequate cooling under die pressure will vary with the diameter and length of the rivet, and each riveting job is likely, therefore, to require a different timing or dwell period. This can at least be merely an approximation when complete reliance is placed upon the operator's judgment of what constitutes the proper dwell period.

It has been found that when the dwell period was uniform, tight rivets were obtained with a dwell of 10 sec. where 15 sec. had formerly been the standard without the timing mechanism. It is claimed that in this instance the percentage of loose rivets was re-

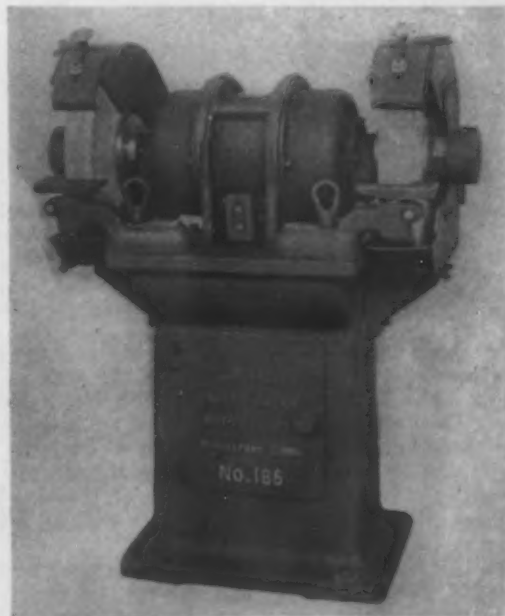
duced to nil, an increase in production of 50 per cent resulted and the cost of cutting out and re-driving rivets was almost eliminated.

The timing valve, it will be seen, permits of accurately determining the dwell period which will insure tight rivets for each riveting job and after being set the valve assures sufficient dwell upon the rivet. The dwell valve operates as follows: The operator depresses the valve handle whereupon the rivet die advances on the rivet. When each rivet is 50 per cent driven the valve goes beyond the control of the operator, the riveter finishes and dwells on the rivet for the predetermined period, at the expiration of which the valve reverses automatically returning the riveter mechanism to its starting position. The valve may be reversed manually as the rivet die is advancing, prior to the rivet die striking the rivet. This constitutes an important safety feature. The valve may be set or adjusted for any duration of dwell from 1 to 60 sec., which setting is by direct reading and requires no trials. Once set, the valve may be sealed and cannot be tampered with without breaking the padlock seal. Therefore, riveting operations may be placed on a piece work or bonus basis without jeopardizing the quality of the work. The valve may be placed at any point for convenient operation as it is a self-contained unit.

The timing element is a constant-speed fractional-horsepower motor with gear reduction and can be arranged for either alternating or direct current of any voltage.

### Motor-Driven General Utility Floor Grinder

Rugged construction is a feature stressed in connection with the motor-driven floor grinder here illustrated, which is being placed on the market by the Bridgeport Safety Emery Wheel Co., Bridgeport, Conn.



*The Spindles Are Mounted in Ball Bearings Which Run in an Oil Bath*

Three sizes, taking wheels 12 x 2 in., 16 x 2½ in., and 18 x 3 in., and equipped with motors of 2-, 3-, and 5-hp., respectively, are offered.

The motors are of General Electric squirrel-cage type, rated to take an overload of 25 per cent with a temperature rise of not over 55 deg. C. Ball bearings employed for the spindles are conservatively selected in respect to their speed and load capacities, and are bench mounted on the spindle and locked by individual lock nuts. Bearing housings are sealed to retain oil and exclude grit and foreign matter, and are of such proportions that oil supply is maintained for a period of time without attention. A sight level oil cup provides the means for conveniently replenishing the oil supply. Wheel guards are of steel plate, and an ad-

justable nose piece is provided. They are fully adjustable, and the outside plates are hinged to facilitate the changing of grinding wheels. A nozzle is provided at the rear for connection to an exhaust system.

The following specifications apply to the smallest and largest machines, respectively: Diameter of spindle in bearings, 1½ in. and 2¼ in.; diameter of flanges, 4 in. and 6 in.; distance between wheels, 20 in. and 25 in.; size of base of machine at bottom, 17 x 19 in. and 18 x 25 in.; overall length, 29½ in. and 37 in.; and weight, 660 lb. and 1150 lb. The height from the floor to the center of the spindle of all machines is 38 in. Automatic starter, overload and underload voltage protection, and push button control are part of the regular equipment.

### Horizontal Two-Way Drilling Machine for Small Flat Sections

A horizontal two-way machine for drilling small flat sections has been brought out by the Lewis Machine Co., 6303 Central Avenue, Cleveland. The machine is designed for use as a production tool and has capacity for drilling holes up to ¾-in. in diameter. The facility with which pieces to be drilled can be mounted on the horizontal table of the machine is an advantage claimed.

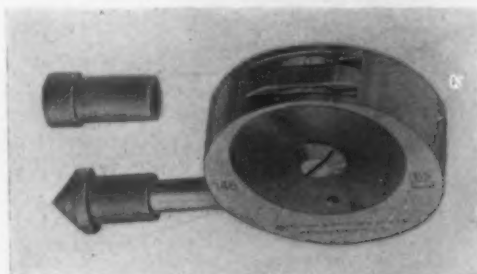
The machine has two independently driven spindles, the drive being through two-step cone pulleys located at the ends of the machine as shown in the illustration. The head travels along the bed with the spindle. A keyway is provided on the spindle to permit the latter to slide back and forth in a key attached to the pulley. Both heads are fed simultaneously by one feed wheel. This actuates a set of bevel gears, the larger of which has a sprocket on its hub. The bearing for the larger gear is a stud that is fastened to the bottom of one of the pulley bearing brackets. Mounted on the sprocket at the operating end and running over an idler in the pulley bearing bracket at the opposite end is a chain in which two feed bars form connecting links. These bars, one on each side, are located close to the ways of the bed. The heads are locked to the feed bars by means of lugs and set-screws on the heads. A turn of the feed wheel moves each feed head and spindle toward the work table at the center of the ma-

in place. The sides of the table are finished for squaring work. The table can be removed and a special fixture mounted on the bed.

### Vest Pocket Speed Indicator

Light weight and accuracy are features of a vest pocket speed indicator placed on the market recently by the Brown & Sharpe Mfg. Co., Providence. The device, which is made up of only four major parts, weighs 1½ oz.

Readings are taken from one of the two openings shown in the periphery of the tool, according to



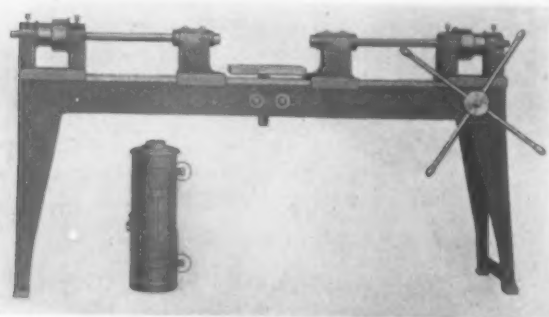
*At Every 100 Revolutions the Steel Plate Lifts, as if Breathing. The number of lifts plus the reading of the dials gives the r.p.m.*

which direction the numbers rotate. The figures are comparatively large to facilitate reading. In using the tool the indicator is set at zero, the thumb is placed directly on a small dent in the side of the tool, and the rubber point is applied to the center of the wheel or shaft the revolutions of which are to be determined. At every 100 revolutions the steel plate lifts beneath one's thumb, as if breathing. The number of lifts is counted for one minute and the r.p.m. in either direction are obtained by adding to the 100 revolutions the readings in units of five which appear in the slot at the top of the tool. When the r.p.m. is less than 100, the speed is indicated directly on the dial. The tool is designated as the No. 746.

### Less Textile Machinery Made

WASHINGTON, Jan. 31.—Establishments engaged primarily in the manufacture of textile machinery and parts reported a total 1925 production of such machinery (including machinery for bleaching, dyeing, printing, mercerizing, finishing, etc.) to the value of \$108,078,182, and of other products (including receipts for repair work and contract work) to the value of \$13,575,142, making a total of \$121,653,324. This is a decrease of 13.5 per cent, as compared with \$140,661,358 in 1923, the last preceding census year, according to the Bureau of the Census.

Orders received by the General Electric Co. in the year ended Dec. 31, 1926, totaled \$327,400,207, an increase of nearly \$25,000,000 over 1925 and surpassing any previous year by almost \$10,000,000. In the quarter just passed orders amounted to \$80,406,570, compared with \$78,636,669 in the same period of 1925.



*Two-Way Drilling Machine with Capacity for Drilling Holes Up to ¾ In. in Diameter. Both heads are fed simultaneously by the one feed-wheel*

chine. The feed gears provide a reduction of two to one.

The heads travel 15 in. along the bed and there is a maximum distance of 40 in. between the ends of the spindles. The spindles are fitted with No. 2 Morse tapers. Change in the location of one or both heads can be made by loosening the set-screw which locks the heads to the feed bar, thus permitting the location of the head at any point along the line of travel. The machine can be used for single hole as well as 2-way drilling.

The table is approximately 11½ in. square and is adjustable vertically 4¼ in., raising its top from 1¼ in. above the ways up to the center line of the spindle. The distance from the bed to the center line of the spindles is 6 in. The table is raised and lowered by rack and pinion and is clamped



# California Steel Industries Meet

## Annual Conference of Related Interests at Del Monte Urges Development of New Markets for Pacific Coast Products

**P**ASSAGE of a resolution calling for a continuation of efforts for the development of new markets for Pacific Coast iron and steel products; addresses by Wigginton E. Creed, president Columbia Steel Corporation and the Pacific Gas & Electric Co., San Francisco, and Charles F. Abbott, executive director American Institute of Steel Construction, New York; the election of Frederick J. Koster, president California Barrel Co., San Francisco, as chairman of the executive committee, and numerous group meetings were among the features of the third annual conference of the Iron, Steel and Allied Industries of California, held Jan. 20 to 22 at Del Monte, briefly reported by telegraph on page 284, *THE IRON AGE*, Jan. 27. A large number of representatives of Eastern companies attended the conference. The total attendance was about 175. Maynard McFie, former president W. T. McFie Supply Co., Los Angeles, and now retired from active business, presided.

More attention was given this year, than at either of the two previous conferences, to group and committee meetings. Group committees representing the mills, structural shops, bar jobbers, general manufacturers and foundries met separately in executive sessions Jan. 20 for discussions of trade practices within the respective groups, and general problems affecting the relation of the individual groups to the organization as a whole.

The California Reinforcing Steel Institute held its annual conference as a group meeting of the Iron, Steel and Allied Industries of California. The bar jobbers in their meetings voted to organize a credit bureau for the interchange of credit information between members. Plans were made also to work for standardization of reinforcing bars in regard to size, weight, etc. The principle of certified concrete was endorsed, and it was decided to have a study made of costs of all kinds affecting the concrete bar business in California. C. Louis Meyer, president Concrete Engineering Co., Omaha, Neb., and treasurer of the Concrete Reinforcing Steel Institute, Chicago, addressed the members of the California institute on the work undertaken and accomplished by the national organization during the past year.

### E. L. Soule Heads Reinforcing Institute

The election of officers by the California Reinforcing Steel Institute resulted as follows: E. L. Soule, president E. L. Soule Co., San Francisco, and Charles M. Gunn, president Gunn, Carle & Co., San Francisco, were re-elected president and treasurer, respectively. J. E. Heber, Truscon Steel Co., Los Angeles, was elected vice-president. E. L. Soule, Charles M. Gunn and N. E. Dawson, American System of Reinforcing, Los Angeles, were elected directors, and W. S. Wetenhall, president W. S. Wetenhall Co., San Francisco, was appointed by the chair to fill a vacancy on the board. R. W. Chrouch, San Francisco, was reappointed executive secretary.

The meeting of the structural steel fabricators' committee was addressed by Charles F. Abbott, executive director, and Lee H. Miller, chief engineer American Institute of Steel Construction. Mr. Abbott and Mr. Miller spoke on the work of the national organization. They were consulted by the committee on a number of local problems, notably the matter of alleged unfair competition of Eastern bidders in the Pacific Coast territory. Mr. Abbott was asked to appoint a field engineer on the Pacific Coast to represent the institute and to cooperate with local fabricators. Mr.

Abbott said that an appointment would be made as early as possible.

The general session of the conference was opened Jan. 21 by Maynard McFie, chairman, who reviewed the organization of the conference and the work that has been accomplished during the past two years. He thanked the different committees for their cooperation, and urged all groups to continue to work with the traffic committee for further readjustment of freight rates so that Pacific Coast producers and distributors will be able to expand their trade territories, particularly in adjacent Western States.

Mr. McFie stressed the importance of perpetual stock inventories for both producers and distributors. More attention, he said, will have to be given to stock-keeping in the future, and a more careful check made of all expenses. "Expenses will have to be more closely watched," he said, "if many firms now in business are to continue to exist."

Speaking on cooperation between employers and employees, Mr. McFie advocated that employers should "treat every man decently and fire anyone who can't stand it."

### Profit Being Squeezed Out of Business

The first speaker to address the conference after the chairman had concluded was Charles F. Abbott, who declared that "profit is being squeezed out of business. If you start exchanging confidences with almost any business man today," Mr. Abbott said, "he will tell you that his sales are holding up satisfactorily, but that his profits are not what they should be. Thousands of businesses in this country are operating without making a profit, or at a profit that is so small that it is negligible."

Mr. Abbott said that he believed one of the main reasons for the lack of profits in many enterprises is failure to meet new conditions with new methods. In this connection he pointed to the trade press. "Most business papers," he said, "are willing to face the facts and to admit that business men are being poorly paid for the thought, time and effort, not to mention the capital that they put into their enterprises." He urged his audience to follow the trade press more closely, and to contribute new ideas to it for the general good of all.

### Competition Causing Small Profits

Speaking on the subject of small profits, Mr. Abbott said, "I am not posing as an alarmist. Business in this country is fundamentally sound. The opportunities for commercial achievement are greater today than they ever were. Business is now on a higher and more ethical plane than at any time in history. But there is something wrong when it is necessary for the average business to operate at a loss and when really substantial profits are made only by a few top-notch organizations in each industry."

"What is the remedy for this condition? The best way to find a remedy is first to locate the cause of the condition. What, then, is the cause? Quite clearly it is competition. Why isn't the corner grocery making money? Simply because there are too many other grocery stores in the community. There isn't enough grocery business to support all the stores in the field. The more efficient type of stores run up enough volume to pay their expenses and to make an adequate profit on the investment. In the meantime the other grocers balance their ledgers in red."

"And take the hardware dealer. He, too, is suffering from competition. His competition does not neces-

sarily come from other hardware stores. Rather does it come from department stores, five-and-ten-cent stores, sporting goods dealers, electrical appliance dealers, mail order houses, house to house canvassers, and all that other myriad of competitors against which the hardware merchant is constantly contending.

"Examine the conditions in any other line that you may care to mention. Take a manufacturing enterprise as an illustration. Unless the company under examination is one of the fortunate few that are making big profits, it will be found that the company we are looking into is being strangled by competition."

Mr. Abbott then said that serious as this type of competition is the worst competition nearly always lies outside of the industry affected. "It comes from another industry making a product or offering a service that is being sold as a substitute for the product or the service that you are offering." He then dwelt on the accomplishments of advertising and trade associations in the improvement of business conditions.

#### Criticizes Purchases of Foreign Steel

Turning to the subject of the importation of foreign steel he said:

"The importation of foreign steel, simply to save a few dollars in the first or initial cost, is a point in question. It is not because of its foreign origin that the use of imported steel should be opposed. There are conditions which surround its use that are well worth considering.

"American structural steel is made to conform to certain specifications that are universally used in this country. They prescribe its chemical composition and mechanical properties which are determined by standard physical tests. The uniform quality and dependability of the American product are important factors in the building industry.

"Foreign steel is made to conform to foreign standards that are not acceptable to us. When manufacturers abroad do attempt to produce a steel conforming to our standards it is a special and unusual undertaking which naturally results in a certain lack of uniformity in quality, and resultant undependability in service. When this condition confronts us, the source of supply is too distant to rectify quickly the errors.

"It is admitted that a lower price offers certain apparent inducements for the use of foreign steel. These inducements, however, are not valid or sound for several reasons other than the element of quality. The use of foreign steel in considerable volume will naturally affect American production in the form of a restricted output. A disorganized and disturbed market will follow."

#### Pacific Coast Steel Industry Growing Slowly

Wigginton E. Creed, in his address, discussed the future of the iron and steel industry on the Pacific Coast. The future of the mills on the Pacific Coast, he said, is good, but developments will necessarily be slow. The prosperity of the steel industry in the West will depend for many years on the diversity of its products.

In each of the past five years, Mr. Creed said, a new steel product has been introduced on the Pacific Coast by local producers, namely, pig iron, sheets, wire products, plates and cast iron pipe.

Speaking on the "increasing difficulty of doing business at a profit," Mr. Creed said that business has never been more disorganized in the United States than it is today. "Business in America," he said, "is being conducted on a sort of direct primary plan. There is too much opportunism. However, on the other hand, the physical and financial situation is good. It is easy to get physical equipment, raw materials and technical skill, and it is comparatively easy to get capital for development work and legitimate industrial expansion.

"But there are several factors confronting us which should be given serious consideration. In the first place, the country is geared to a production beyond the capacity of the domestic market to consume. We are faced with a high wage scale in an economic cycle of

falling prices. We are faced by world competition, not in steel only, but in other industries as well, and I venture to predict that this form of competition will increase. American business must see to it that the American public receives American products. In order to do this there must be an end to a great deal of the unintelligent competition that now exists between American producers and distributors."

Mr. Creed condemned the increased cost of paper work that business is called upon to perform. He severely criticized the excessive call made on business for information and statistical data of all kinds, which cannot be prepared without time and study. The Federal and State governments, and all sorts of private agencies, he said, have enormously increased the cost of doing business by the demands that they make on private companies and public utility corporations for statistics.

#### Says Booster Spirit Is Often Overdone

He also stated his conviction that "there are too many organizations with a booster spirit without any knowledge of fundamental facts" which cause confusion and waste. In any city or community, especially on the Pacific Coast, Mr. Creed declared, "industry should not be encouraged beyond the capacities of the market. Let us support and build up what we have before we encourage new industry which, in many instances in the past, have simply duplicated and triplicated the work that had already been started."

Chairmen of the group committees addressed the general conference on the work of their respective groups. Most of these reports were more or less general in character, as detailed reports will be submitted later to the executive committee.

At the final session Jan. 22 the conference was addressed by J. J. Backus, superintendent Department of Building and Safety, Los Angeles, who spoke on the need of a standard building code for California. Mr. Backus outlined the work that has been done toward standardization of building codes, and asked for the cooperation of the California steel industry for carrying on the work. A resolution was passed by the conference thanking Mr. Backus for his address and referring his request to the executive committee.

The principal resolution adopted stated that the iron, steel and allied industries represent approximately 25 per cent of the payrolls of California, that the future development of industry in California to a large extent depends on a sound growth of the iron and steel industries, and that, as a result of the coordinated work of the individual groups making up the conference, marketing territory has been broadened in neighboring States and greater efficiency in production and distribution has resulted. It was therefore resolved that this coordinated work of the conference should be more energetically continued.

#### F. J. Koster Heads Executive Committee

In the election of officers, Frederick J. Koster was elected to succeed Maynard McFie as chairman of the executive committee; John D. Fenstermacher, vice-president Columbia Steel Corporation, San Francisco, was reelected vice-chairman, and Charles S. Knight, director industrial department California Development Association, San Francisco, was reelected secretary.

The election of group committee chairmen for Northern California resulted as follows: Steel mills, C. J. Maas, Judson Mfg. Co., San Francisco; merchant steel jobbers, H. L. Simon, Foucar, Ray & Simon, San Francisco; reinforcing steel jobbers, R. G. Falk, Badt-Falk Co., San Francisco; structural shops, Charles Spencer, California Steel Co., San Francisco; general manufacturers, H. W. Force, California Corrugated Culvert Co., Berkeley; foundries, George A. Gunn, Best Steel Casting Co., San Francisco. Committee chairmen for Southern California are as follows: Steel mills, J. D. Fenstermacher, Columbia Steel Corporation, San Francisco; merchant steel jobbers, L. C. Scheller, Union Hardware & Metal Co., Los Angeles; reinforcing steel jobbers, H. E. Dawson, American System of Reinforcing, Los Angeles; structural shops, E. F. Gohl, McClintic-Marshall Co., Los Angeles; general manu-



facturers, George J. Kuhrts, Jr., Standard Boiler & Steel Works, Los Angeles; foundries, Martin Madsen, Madsen Iron Works, Los Angeles.

## San Francisco Fabricators Adopt One-Bid Policy

SAN FRANCISCO, Jan. 26.—Following addresses by Charles F. Abbott and Lee H. Miller, executive director and chief engineer, respectively, American Institute of Steel Construction, New York, at the Palace Hotel, here, last night, representatives of practically all structural shops in the San Francisco Bay district adopted a one-bid policy as the first step toward stabilization of the local fabricating situation. It was agreed by all of the fabricators at the meeting, which was attended also by representatives of three Eastern mills, that hereafter one estimate only will be submitted on each construction job that comes up for steel bids. Heretofore it has been customary to submit several bids on each job. By adoption of the one-bid policy it is expected that better economic conditions will be developed in the local fabricating industry. Paul F. Gillespie, sales manager Judson Mfg. Co., presided.

Mill representatives present included Joseph J. Tynan and Arnold Foster, vice-president and Pacific Coast sales agent, respectively, Bethlehem Steel Co.; E. J. Schneider, contracting manager of bridge and structural department United States Steel Products Co., and C. P. Hensley, local sales agent Jones & Laughlin Steel Corporation.

### Same Problems Solved Elsewhere in United States

Mr. Abbott, in his address, told the local structural men that their problems were not local in character. Similar conditions have prevailed and have been solved, he said, in other parts of the United States and Canada. He said that this is an era of cooperation, that all business organizations are confronted with new conditions and that the only way new conditions can be solved is by an application of new methods.

"New and modern methods of construction are being developed," Mr. Abbott said, "and I predict that the time is coming when every residence in the United States will have structural steel beams. Today there are over 5000 dwellings in this country that have structural steel frames. Steel frame dwellings can be constructed at a cost of not over 5 to 10 per cent more than the cost of wooden frame dwellings. As the production of small steel beams increases the cost of erecting steel frame dwellings will materially decrease."

### Advises Caution in Welding Structural Steel

Mr. Miller advised caution in the use of welding in the fabrication and erection of structural steel. He said that a number of tests are being made by engineers independently and in cooperation with the American Institute of Steel Construction. A committee of the American Society of Civil Engineers, he said, is also conducting experiments. He stated that the welding of structural steel is still in early stages of development, that there exist a number of conflicting theories about it which will have to be clarified, and that if welding is used indiscriminately by the fabricating industry, without a thorough study of its possibilities and limitations as a method, there may be serious consequences.

Mr. Miller stated that he did not wish to be understood as condemning welding. It can be done, he said, but there are not as yet enough positive facts about it in connection with structural steel to enable anyone to speak authoritatively.

The directors of the Superior Steel Corporation, Pittsburgh, took no action at their meeting held in Pittsburgh, Jan. 24, on a dividend due at this time. It was explained that the unsettled condition of the market for strip steel, its sole product, encouraged a conservation of cash resources and that the recent dividends, although they had been paid at quarterly intervals, were not called quarterly disbursements.

## INDIA A GOOD MARKET

### United States Participated Well Last Year—Supplied 11 Per Cent of Structural Steel

Imports of steel products by India were much larger in 1926 than in 1925, with the exception of rails and railroad material. In this field, however, the United States furnished 7 per cent of total purchases last year, compared with only 4 per cent in 1925. The United States also participated in the increase of imports in agricultural machinery and tools. Although 1925 was a poor business year with India, imports were slightly in excess of 1924. The following table shows the tonnage imported in 10 months of 1926, compared with the year 1925 and the percentage of the total imports in 1926, purchased in the United States:

Product	1926, 10 months	1925	U. S., Per Cent
Bars .....	132,000	71,000	2.00
Pipes, tubes and fittings...	27,100	16,300	21.00
Bolts and nuts .....	10,400	5,800	26.00
Beams, shapes, etc. ....	69,700	57,000	11.00
Screws, wood .....	910	820	62.00*
Wire nails .....	13,400	6,100	3.00
Sheets, galv. corr. ....	194,000	181,000	1.50†
Rails and track material...	61,000	52,000	7.00

\*Only 24 per cent of the 1925 total was from the United States.

†Great Britain furnished 96 per cent of the total imports.

### Increasing Business with Latin America

NILES, OHIO, Feb. 1.—Speaking before the Mahoning Valley McKinley Club here on Saturday of last week, in connection with the birthday anniversary of the late President McKinley, whose home was here, Director Julius Klein of the Bureau of Foreign and Domestic Commerce, Department of Commerce, discussed "Trade Rivalries in Latin America." He pointed out that American exports to the Southern Republics since the prophecy of Mr. McKinley in Buffalo that "the period of exclusiveness is past; the extension of our commerce is the present problem," have increased from \$124,000,000 in 1900 to nearly \$900,000,000 in 1926. Even more significant than this astounding seven-fold increase, Mr. Klein said, is the relative proportion of the total of Latin-America's overseas purchases which now come from the United States.

### Construction Cost Back to 1922 Level

Construction costs declined slightly during 1926, reaching the lowest average occupied during any year since 1922, according to statistics compiled by the Associated General Contractors of America and announced recently. The tendency toward lower cost levels in force since mid-summer during 1923 continued to make itself evident. The decline in the average cost of operations last year was largely the result of decreases in the prices paid by general contractors for basic materials entering into their operations, these decreases resulting in a reduction of five points from the index figure of 183 established in 1925. The average of wages paid by contractors in the principal construction centers of the United States during 1926 was slightly more than the corresponding average registered for 1925.

### To Buy Marion Steam Shovel Plant

An inventory of the assets of the Marion Steam Shovel Co., Marion, Ohio, has been completed for Blair & Co., New York investment banking corporation, which has contracted to buy the plant. After reports of the appraisal and audit have been filed with Blair & Co., negotiations for the transfer of the property are expected to be closed. It is stated that all but a small part of the company's stock has been deposited in escrow preparatory to its transfer to the New York firm. After the sale is consummated, Blair & Co. will announce their financing plans, which it is stated will include the placing of a stock issue on the market.

## Foundrymen Prepare for Chicago Convention in June

The Edgewater Beach Hotel, located in block 5300, Sheridan Road, Chicago, has been selected as the headquarters and meeting place of the 1927 convention of the American Foundrymen's Association, June 6 to 9. The tentative schedule of meetings is as follows:

Monday, June 6.—Registration and committee meetings.

Tuesday, June 7.—Sessions on apprentice training, general foundry practice, and gating castings.

Wednesday, June 8.—Sessions on non-ferrous founding, cast iron metallurgy, steel founding and malleable iron.

Thursday, June 9.—Sessions on foundry costs and sand control.

An untried feature will be breakfast gatherings each morning to promote acquaintanceship among the gray iron, steel, malleable and non-ferrous groups. Special arrangements for reduced railroad rates on all lines leading to Chicago have been made. Round trip tickets will be sold at one and one-half fare to holders of identification certificates secured only through the secretary of the association.

Any member contemplating the presentation of a paper in June is requested to communicate at once with the secretary, informing him of the nature of the paper. All manuscripts should be in the committee's hands by March 1.

## American Exchange Papers for Foreign Foundry Associations

Arrangements have been made by the American Foundrymen's Association for exchange papers to be presented this year at some of the meetings of the foreign foundry associations. James T. MacKenzie, chief chemist, American Cast Iron Pipe Co., Birmingham, has been selected to present the American exchange paper at the next annual meeting of the Institute of British Foundrymen. Jesse L. Jones, metallurgist, Westinghouse Electric & Mfg. Co., Pittsburgh, has prepared the exchange paper for the meeting of the Association Technique de Fonderie de France. O. W. Potter, of the engineering college, University of Minnesota, has been selected to write a paper for the March meeting of the Association Technique de Fonderie de Belgique.

## To Curb Misleading Correspondence Schools

H. A. Wagner, national director and chairman of the national correspondence school committee of the American Association of Engineers, has issued a statement, as follows:

"In view of the fact that our country is overrun with correspondence schools that by misleading advertising and misleading circular matter are robbing young America of millions of dollars per year, the

American Association of Engineers has prepared a bill to curb misleading correspondence schools and this bill is now being introduced into the various State legislatures and will ultimately be introduced into Congress in order to obtain Federal legislation on this subject."

## American Chemists to Discuss Lime

The increasing importance of lime in industry has awakened the interest of scientific men of the country and, as a result, a symposium on lime has been included in the program of the American Chemical Society for its spring meeting at Richmond, Va., April 11 to 16. Three half-day sessions will be devoted to the technical problems involved in the production and use of this material.

The extent to which lime is used may be gained from production and sale figures in 1926. In that year lime produced and sold amounted to approximately 5,000,000 tons with a value of \$46,500,000, of which about 45 per cent was consumed by the chemical industries. These figures do not include the large tonnages consumed by those industries which produce their own lime, such as alkali manufacturers, the iron and steel industry, carbide producers, sugar refineries, etc.

A complete set of abstracts will be published by the National Lime Association in one volume and will be available April 13. J. R. Withrow, head of the department of chemical engineering, Ohio State University, is in charge of the symposium and will preside.

## Coming Meetings of Institute of Metals

At the annual general meeting of the Institute of Metals, to be held in London on March 9 and 10, 17 papers are expected to be submitted. In the evening of March 9 the annual dinner will be held at the Trocadero restaurant. Following the dinner, at which there will be a curtailed toast list, a dance will be held, which is the first function of the kind to be arranged by the institute.

The annual autumn meeting will be held at Derby in September. Arrangements are being made under the direction of Sir Henry Fowler, of Derby, who is chief mechanical engineer of the London Midland & Scottish Railway Co. He has just been appointed a vice-president of the institute.

The past year witnessed a steady growth in the membership in spite of Great Britain's industrial troubles. On Dec. 31, it was 1801, as compared with 1692 a year previously. If this rate of increase is but slightly raised during 1927 the membership should reach the 2000 mark before the institute celebrates its twentieth anniversary next year.

## Membership of American Foundrymen's Association Passes 2000

Membership records in the American Foundrymen's Association were broken in 1926 and the 2000 mark was passed. New members elected during 1926 were 501 in number, with 79 dropped by death or resignation, leaving a net gain of 422. The book membership on Dec. 31, 1926, was 2176. The largest increase was in January with 98 new members.

During the year, 353 individuals took advantage of the provision in the by-laws, effective Jan. 1, whereby persons associated with a firm or organization holding membership could become members without payment of the entrance fee and with dues of only \$7.50 a year.

The five leading firms in point of membership are the Ohio Brass Co., Mansfield, Ohio, 19; Detroit Steel Casting Co., Detroit, 18; Ajax Metal Co., Philadelphia, 14; Walworth Co., Kewanee, Ill., 12; and General Electric Co., West Lynn, Mass., 11.

Wholesale prices in England at the beginning of the year were lower than at any time since 1916. The index of the (London) *Economist* on Jan. 1 was 3975, based on 2200 as the average of 1913. The highest point was reached April 1, 1920, with 8352.

## COMING MEETINGS

February

**American Institute of Mining and Metallurgical Engineers.** Feb. 14 to 17. Annual meeting, Engineering Societies Building, New York. H. Foster Bain, 29 West Thirty-ninth Street, New York, secretary.

**American Ceramic Society, Inc.** Feb. 14 to 19. Annual meeting, Hotel Book Cadillac, Detroit. Ross C. Purdy, 2525 North High Street, Columbus, Ohio, general secretary.

**American Management Association.** Feb. 15 and 16. Annual winter meeting, Hotel Pennsylvania, New York. W. J. Donald, 20 Vesey Street, New York, managing director.



### American Brass Co. Takes Over Manufacture of Everdur Metal

The American Brass Co., 25 Broadway, New York, has completed arrangements with the Du Pont Everdur Co., Wilmington, Del., whereby it will take over the manufacture and sale of Everdur metal, an alloy of copper, silicon and manganese, which was developed by the Du Pont company in its search for a material which would combine the tensile strength and elastic limit of low and medium carbon steels with machinability, and working qualities and resistance to a large number of corroding agents.

The alloy will be manufactured by the brass company in the form of casting ingots, plates, sheets, rods and wire and will also be available in the form of washers, bolts, nuts, screws, rivets, wire cloth and castings. The research work conducted by the Du Pont company will be continued by the new owner of the patents.

### Jeffrey Mfg. Co. Observes Fiftieth Anniversary

The Jeffrey Mfg. Co., Columbus, Ohio, is observing this year the fiftieth anniversary of its founding. Established to manufacture a machine for cutting coal mechanically on which new types of chain for power transmission were used, the company has widened its field to include coal mining machinery of all kinds, electric locomotives and elevating, conveying and crushing machinery. Early in the plant's history the chains used as drives on its coal cutters were found to work equally well on feed rolls, and began to be used for bucket elevators, conveyors and drives in several industries. Other types of chains and conveyors were a natural development, and the early coal cutting machine became the forerunner of a complete line of coal mining equipment. The small plant of 1877 has grown into a modern manufacturing establishment covering 60 acres.

### Brown Boveri to Give up Steel Fabricating

The American Brown Boveri Electric Corporation, which took over the plant and other assets of the New York Shipbuilding Corporation at Camden, N. J., will discontinue the fabrication of structural steel and will devote its structural shop to the assembling of electric locomotives and other electrical equipment. The company, particularly when it was the New York Shipbuilding Corporation, has been a somewhat prominent competitor for structural steel work in the Philadelphia and New York districts.

### Malleable Castings Recover Slightly

Production of malleable castings in December is reported from 139 plants by the United States Department of Commerce at 50,017 tons. This compares with 45,793 tons in November (the smallest month in more than two years) and with 65,766 tons in December, 1925. The highest month of the year was January, with 75,658 tons. Shipments have been consistently below production in all but one month of 1926. The December figure, at 43,766 tons, was the smallest of the year. That for March, at 70,193 tons, was the largest.

Total production for the year was given as 728,730 tons. This represents a drop of more than 1 per cent from the 737,532 tons of 1925. Shipments in 1926 aggregated 684,582 tons, against 700,782 tons in 1925, the resulting drop being more than 2 per cent. Capacity was operated in 1926 at 55.7 per cent, compared with 54.4 per cent in 1925. The increase in percentage operated is due to a reduction in the rated capacity, from an average of 112,943 tons per month in 1925 to 108,991 tons per month in 1926.

The American Can Co. will soon be ready to operate its new plant at Sacramento, Cal., to its capacity of 1,500,000 cans per day, in time to take care of the demands for the 1927 canning season.

### Bethlehem Earns \$7.48 Per Share of Common Stock in 1926

Net earnings of the Bethlehem Steel Corporation for the quarter ended Dec. 31, 1926, were \$4,481,316, equal after preferred dividends to \$1.55 on the 1,801,519 shares of common stock, and making the total net earnings for the year \$20,246,167, or \$7.48 per share of common. This compares with \$13,858,196, or \$5.30 a share of common, in 1925, and is the best year the company has had since its absorption of the Midvale and Lackawanna interests. The last quarter earnings compare with \$4,550,978, or \$1.57 a share, in the quarter ended Oct. 31, and with \$4,278,830, or \$1.77 a share, for the corresponding quarter in 1925. The corporation declared its regular quarterly dividend of \$1.75 on its preferred stock, but took no action on common dividends.

Gross sales and earnings for 1926 aggregated \$304,361,805, as compared with \$273,025,320 in 1925. Unfilled orders as of Dec. 31 were valued at \$49,912,796, compared with \$44,553,571 at the end of the previous quarter and with \$70,566,923 on Dec. 31, 1925.

### Reorganization of Williamsport Wire Rope Co. Completed

Purchase of the interest of the late Joseph Cochran in the Williamsport Wire Rope Co., Williamsport, Pa., by a group of old employees is announced simultaneously with a new construction program which will enlarge greatly the present capacity of the plant. The largest of the new buildings planned will be located southwest of the present plant and will be 450 ft. long and 200 ft. wide.

Robert Gilmore, associated with the company for more than 34 years, is president under the new organization. Other officers are Edgar Munson, vice-president and treasurer; Logan Cunningham, vice-president and secretary; C. M. Ballard, vice-president and general sales manager. All have been associated with the company for a number of years.

### Medals Given for Long Service at Bay View Plant

One hundred ninety-three employees with a record of 25 or more years of continuous service in the Milwaukee, Wis., plant of the Illinois Steel Co. were guests of honor at a dinner given by the company on Jan. 27, celebrating the twenty-fifth anniversary of organization of the United States Steel Corporation and the sixtieth anniversary of the establishment of the local plant. Four of the employees present had completed more than 50 years of continuous service and were tendered gold medals by T. W. Robinson of Chicago, vice-president. One has a record of 54 years of steady service, another 53 years, and two, 52 years. Silver tokens were presented to the remaining 189 guests of honor by John D. Maurer, general superintendent of the Milwaukee plant, which is familiarly known as the Bay View mills.

### Fewer Steel Workers Active in December

Reports from 212 establishments in the iron and steel industry show a reduction in number of wage earners in December, compared with November, amounting to 2.3 per cent. This decline was from 284,533 to 277,885. The amount of one week's payroll dropped from \$8,776,621 to \$8,637,530, or 1.6 per cent.

In contrast with this, there was a 1.4 per cent gain in employees making foundry and machine shop products, as reported by the Bureau of Labor Statistics. Numbers went up in 946 establishments from 231,742 to 235,079. Wages were slightly higher, for the aggregate payroll for a week advanced from \$6,860,523 to \$7,094,884, or 3.4 per cent. Machine tool establishments showed a reduction of 0.4 per cent in number of employees, but an increase of 0.8 per cent in aggregate payroll.

## Steady Uptrend of Bituminous Coal and By-Product Coke Shows Coke Gaining at a Great Rate

**BITUMINOUS** coal production over the past 14 years has shown many wide swings up and down. It may be that 1926, when the figures are all collated, may surpass the present high record, made in 1918. With the possible exception of that year it has shown the highest production ever recorded. The trend line for bituminous coal starts in 1913 at a little less than 39,000,000 tons per month. It enters 1927 at just under 44,500,000 tons per month. The gain over the period of 14 years is about 14½ per cent. The annual increase in monthly production is about 402,000 tons.

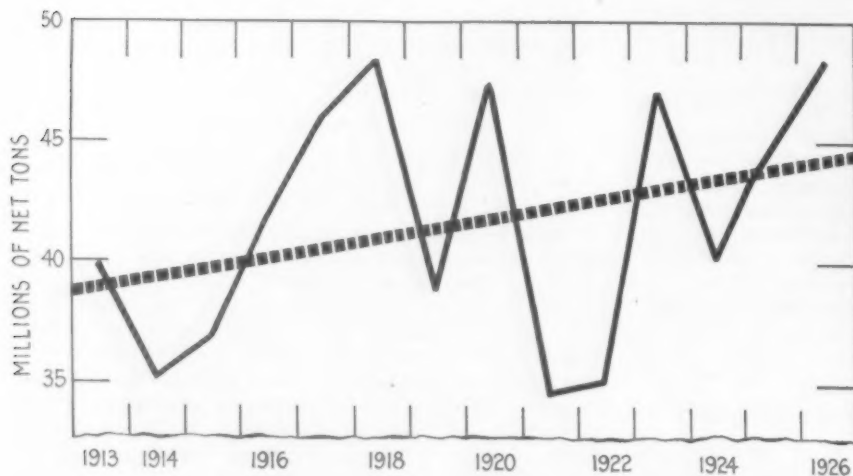
This gain would have been considerably heavier, but for the fact that increasing efficiency in use of fuel and increasing displacement of coal by oil have held it down. As it is, the increased use of bituminous coal in the 14 years under survey, if measured on the trend line basis, is considerably less than what probably has been the increase in population over the same period. It is estimated that the population of the United States at the beginning of 1927 is not far short of 117,000,000, if indeed it has not already passed that level. At the beginning of 1913 the population of the country was approximately 96,000,000. The gain between these two dates represents about 22 per cent, or half as much again as the percentage gain in bituminous coal measured on our trend line.

### By-Product Coke

By-product coke, on the other hand, has shown a gain far higher than the gain in population. This has been due primarily to the rapid displacement of bee-hive coke by by-product coke, because of the greater financial return possible from the full operation of the by-product process. This displacement has raised the by-product proportion, in 14 years, from less than one-third to more than three-quarters of the total coke.

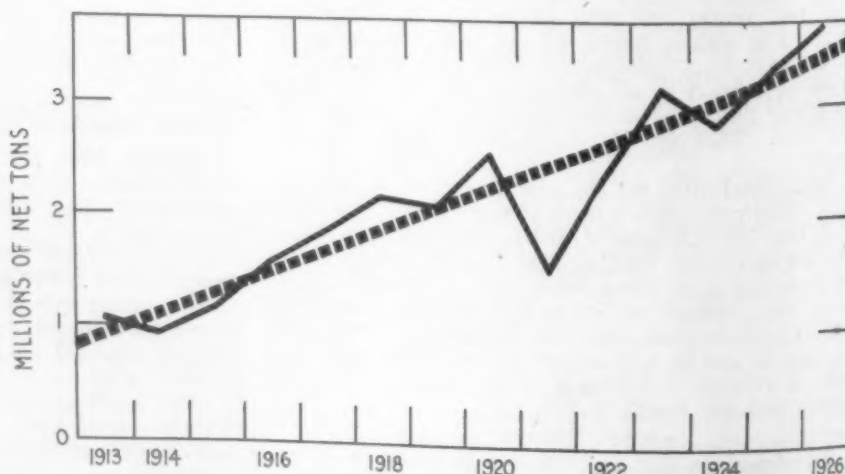
Our trend line at the beginning of 1913 represents about 827,000 net tons production of coke per month. At the beginning of 1927 the level is about 3,525,000 tons per month. The increase over the 14-year period has been 326 per cent. The annual increase in monthly production is about 193,000 tons.

There has been comparatively little departure of the individual years from the trend line level. Except for 1921, when there was a large slump, this departure has rarely reached 10 per cent. In 1925 and 1926 production has been above the trend line and both years have made new high records, displacing the previous record, made in 1923. In 1924, also, production was heavy, viewed in the light of years preceding 1923. It was lower than in that year, however, and was somewhat below our trend line.



***PRODUCTION** of Bituminous Coal is on the Upgrade, the Annual Increment in Monthly Production Being About 400,000 Tons. The monthly average of the first three years shown is something over 37,000,000 tons, whereas the past four years have an average of almost 45,000,000 tons*

***BY-PRODUCT** Coke Production Has Increased Heavily. The trend line is at four times its level of 14 years ago. The average monthly output of the past four years has been approximately 3,250,000 tons, against an average of only 1,056,000 tons for 1913, 1914 and 1915*





# In This Issue

*Though business is good, profits are poor, says head of steel fabricators' institute.—Business men are being poorly paid for the effort and capital put into their enterprises. Competition is squeezing the profits out of business.—Page 365.*

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*Finds electricity an ideal heat for drying molds.—Unit heaters placed on top of molds enable machine tool builder to pour molds the same day they are made.—Page 359.*

---

*Presence of a small amount of silicon materially improves copper castings.—Relieves copper of its unsoundness, eliminates oxygen and drives off hydrogen occluded during melting.—Page 355.*

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*Finds that immigration is not well-timed with industrial activity.—Though extremely sensitive to fluctuations in employment conditions, immigration lags from two months to a year.—Page 356.*

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*Over one million tons of foreign iron and steel was bought by American customers during 1926.—Highest since 1903. Exports were just about double the imports. Export gain over 1925 was 11 per cent.—Page 358.*

---

*Germany is said to be dissatisfied with the International Raw Steel Cartel.—For producing in excess of its quota during the last four months of 1926, German mills must pay to the Cartel fines totaling about \$2,700,000.—Page 401.*

---

*Improper venting ruins more castings than any other fault in molding or core-making.—Cinder beds, employed to permit free passage of gas in making large castings, can be used several times if properly protected.—Page 347.*

---

*Cheap coal is absolutely essential if England is to regain its lost supremacy in heavy steel.—If British mines can lay down their product cheaper at seaboard than any other coal in the world at seaboard, England again may export heavy steel, rather than import it, as at present.—Page 352.*

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*In the face of increasing world competition, producers and distributors should cooperate.—Pacific Coast steel manufacturer believes that international fight for business will increase, and urges that unintelligent competition between producers and distributors be ended.—Page 366.*

---

*Employment in metal products plants increased while producers lost.—December figures show a gain of 1.4 per cent in foundry and machine shop workers, and a loss of 2.3 per cent in iron and steel industry.—Page 369.*

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*Bituminous coal output gained 14½ per cent in last 14 years.—When figures are all collated, they may show that 1926 established a new high record.—Page 370.*

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*Government issues anti-dumping order against German pig iron.—All imports since appraisements were ordered held up are affected.—Page 373.*

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*American shipbuilding industry is in a desperate condition.—Many shipyards have been shut down, and many more will follow unless work is forthcoming. Shipbuilders' association will urge Navy Department and Shipping Board to release contracts now under consideration.—Page 376.*

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*Pig iron production gained slightly.—January daily output is estimated at 100,000 gross tons, as against 99,712 tons in December. Number of furnaces in blast Feb. 1 was 208, a gain of five.—Page 377.*

---

*Unwise for communities to encourage new industries beyond market capacities.—Better build up present industries than endeavor to bring in new ones, unless a genuine market demand exists.—Page 366.*

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*Automotive industry increases its steel demands.—But buying is being done cautiously. Production schedules are being enlarged, but as yet there are no signs of getting back to full operation.—Page 387.*

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## Diagnosis of Foundry Problems

**L**ESSENING production of gray iron castings over the past decade and more has caused much thought as to causes. Three recent articles in our columns, written by H. P. Parrock, and another to be published shortly, have gone after this gray iron problem in an unusual way.

In December two articles were devoted to an analysis of costs based upon differences found under varying conditions of operation. These differences, frequently ignored by foundry cost departments, were shown to have a vital effect upon profits obtained from business at varying quotations. In the Jan. 20 issue the use of alloy iron was strongly recommended for special castings and a method of obtaining this iron was outlined. In the article to come a neutral or "break-even" point is determined, where the most economical tonnage of the foundry is produced, with utter disregard of full capacity.

*For News Summary See Reverse Side*



## GERMAN IRON DUMPED

### Treasury Order Retroactive on Pig Iron Imports Rolled Products Held Not Liable

WASHINGTON, Feb. 1.—In two orders made public last Saturday, Secretary of the Treasury Andrew W. Mellon held (1) that German pig iron is being dumped into the United States and (2) that German rolled steel products imported into the United States are not subject to countervailing duties.

#### Pig Iron Is Being Dumped

In the anti-dumping order, finding that "pig iron from Germany is being sold and is likely to be sold in the United States at less than its fair value, and that the industry of making pig iron in the United States is likely to be injured by reason of the importation of pig iron into the United States from Germany," the penalty will be equal to the difference between the market value in Germany and the price at which the pig iron was sold into this country. The order not only applies to imports from Germany which may now be coming into the United States at less than the German market price, but it retroacts and affects all imports of German pig iron since appraisements were ordered held up, where such imports have been sold into the United States at less than the home market price.

Some of these appraisements were ordered held up as long ago as the late spring of 1926. The order will not apply to imports from Germany which have been sold at prices equal to or above the German home market value. It is claimed that some of the imports from Germany were sold at from \$2 to \$3 per ton less than the German home price.

The anti-dumping order grew out of a complaint by Eastern merchant blast furnace interests. They succeeded last year in having the Treasury Department issue a countervailing order against imports of pig iron from India, by reason of the payment of bounties by the Indian Government on the production of steel ingots. Liquidation of entries under this particular order is under suspension, awaiting the fixing of countervailing penalties. The Tariff Commission, also at the request of Eastern merchant furnace operators, is studying a report of its staff based on a complaint asking for an increase of 50 per cent, under the flexible tariff section, in the duty of 75c. per gross ton on pig

iron. Should recommendation for the increase be made, and acted upon favorably by the President, the duty would be increased 37.5c. to \$1.125 per ton.

#### Steel Bounties Do Not Affect Our Imports

Secretary Mellon's order instructing collectors of customs not to assess countervailing duties on imports of German rolled steel products followed complaints by prominent American steel manufacturers that the German Raw Steel Syndicate was paying bounties to consumers of steel in Germany when the material was intended for exportation. The German Government intervened and succeeded in having a German-American Commission make an investigation. Meanwhile the Treasury Department issued an order suspending liquidation of entries from Germany which had been ordered for the purpose of assessing countervailing duties. The commission reached the conclusion that no bounties were being paid on rolled steel products for export from Germany. It said, however, that rebates had been allowed by the Syndicate on rolling mill products which were remanufactured for exportation.

The Treasury order sustained the finding of the commission, but held it impracticable to fix countervailing duties on the remanufactured lines. "The question whether such rebate or allowance constitutes a bounty is not entirely free from doubt," said the order, "and the report of the commission has shown not only that it is impracticable to fix a rate or rates applicable to the various types of merchandise, but also that the amount of the rebate on finished products is so small as to render the imposition of countervailing duties in a like amount a negligible factor in affording protection to domestic interests."

In this order the Treasury makes it clear that it does not affect the general inquiry now under way regarding alleged dumping of iron and steel products from Germany into the United States.

A large importer of German pig iron points out that the decision of the Treasury Department that German iron has been brought to the United States in violation of the anti-dumping act can exercise but little effect in the present circumstances. The market on German pig iron has been too high to compete with the American domestic market for several months, so that only a few unimportant tonnages are due to arrive.

### Standard Slag Co. Buys Bessemer Company

YOUNGSTOWN, Feb. 1.—An important industrial transfer was concluded this week, in the purchase by the Standard Slag Co. and allied interests of the Bessemer Limestone & Cement Co., operating a property at Bessemer, Pa., with capacity for 1,500,000 bbl. of cement per year, in addition to substantial tonnages of fluxstone for blast furnaces. This acquisition, together with its present holdings, gives the new owners control of about 60,000,000 tons of limestone reserves.

Subsidiaries of the Standard Slag Co. include the Buffalo Slag Co., the Maryland Slag Co. and the Federal Cement Co. Interests identified in the project with the parent company include the owners of blast furnaces in connection with which it operates slag treating plants.

L. A. Beeghley, president of the Standard Slag Co., will become president of a new company to be formed, which will operate the cement division. The present management of the Bessemer company will largely be

retained, though offices will be moved from the Stambaugh Building, Youngstown, to the City Bank Building. F. R. Kanengeiser, who has been vice-president and general manager of the Bessemer company, will, however, retire from the organization and engage in a new industrial enterprise at Youngstown. Mr. Kanengeiser has been identified with the company as manager for many years and was largely instrumental in its success.

### Reversing Mill Bought for Jones & Laughlin Seamless Tube Plant

For its new seamless tube plant at Woodlawn, the Jones & Laughlin Steel Corporation has purchased through F. H. Crawford & Co., Inc., 50 Church Street, New York, the 30-in. 2-high reversing mill which was in the plant of the former Cromwell Steel Co., at Lorain, Ohio. With the mill purchase has been included motor-driven transfer tables approximately 500 ft. in total length. It is expected that shipment will be completed within the next two weeks.

*Schedule of the next installments of the Business Analysis and Forecast, by Dr. Lewis H. Haney, Director New York University Bureau of Business Research, follows: Feb. 17—Activity in Steel-Consuming Industries; Feb. 24—Position of Iron and Steel Producers; March 3—General Business Outlook.*

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## Steel Trade Trends

DEVELOPMENTS of the past month, or since the turn of the year, make it still clearer that earlier formed opinions were correct, that a widespread though small drop of a general character occurred in steel requirements some three months or thereabouts before the end of the old year. The advent of a new year brought neither a decrease in demand nor a discernible reversal of the previous drop. None of the drop should be charged to the new year, which has conducted itself, relative to the character of the old year's ending, much as steel years have been doing in the recent past.

If there is disappointment as to "the new year," it is due either to a failure to recognize the easing off in conditions that occurred in September and October or an unwarranted expectation that the change in the calendar would somehow correct the deficiency. January brought such recovery in orders and specifications and in production, over the November and December rate, as should on ordinary grounds be expected. This may be considered a seasonal swing and as Spring is more closely approached there will presumably be more of the same thing. Recognition that the real turn occurred in the neighborhood of four months ago makes reconciliation with current conditions easier, and the increasing activity since the first of the year suggests, if it does not prove, that the turn that did occur is not of a progressive or cumulative character.

In the minds of the trade there is, in fact, practical unanimity of opinion that this year will be a good one in steel tonnage, but not altogether so good as last year. This opinion reflects the two points just considered, that there has been a little letting down in activity, and that this is not progressive.

The interesting question is where we should place the present situation from the longest range viewpoint, whether the recent past has been above a general normal or the present and nearby future are below a general normal. This is a matter that can be studied quantitatively, and with particular facility, because the course of affairs has divided itself nicely into four-year periods.

The past four years have witnessed a steadiness in demand not usually seen in steel for so long a period. The year 1924 was only a moderately off year despite the deep depression just at its middle. Preceding it were the first four post-war years. The four immediate pre-war years were years of substantial activity, three of them making successive new tonnage records. A comparison of these three four-year periods is distinctly in point and is made below:

### Average Annual Steel Ingot Production

Four Years Through	Gross Tons	Relative
1913	27,187,095	100.0
1922	32,092,172	118.0
1926	42,892,769	157.8

The comparison would seem to suggest clearly that the past four years have been distinctly above a normal for the period. If it be considered a case of full recovery delayed by the war, the time for the delay has been allowed. The second four years after the war showed 33.7 per cent more tonnage than the first four post-war years.

The decline in tonnage, however, would not according to precedent carry the trade far back in point of time. A two or three-year backset may easily be sufficient to supply a basis for recovery again. A 10 per cent decrease would put this year's tonnage just a trifle under the average of the past four years, and while definite predictions are naturally not attempted the figure mentioned is perhaps typical of present appraisals.

CLARIFICATION of technical definitions seems always in demand. An expanding art and new scientific developments, while spelling technical advance, bring a tangling of nomenclature along with the broadening of the vocabulary. Undoubtedly the advance is checked more or less by inexactness of the meaning of terms. The fact was forcibly illustrated in the realm of heat treatment at the session on "normal" and "abnormal" steels at the recent Washington meeting of the steel treaters, reviewed in THE IRON AGE last week. It is gratifying to note rapid progress in the formulation of basic heat treatment definitions, the committee, representing three leading



technical societies, having recently nearly reached accord. The common impression which the word "abnormal" conveys is unfavorable and yet abnormal steel is good steel for many uses. When it is authoritatively stated that the addition of ferrovanadium to steel under certain conditions produces an abnormal steel, a wrong and unfair impression is broadcast. Applying, as these terms do, only to certain case-hardened steels, it is time for new designations for steels that differ so little intrinsically and yet are normal for many industrial applications.

### Change Still the Order in Steel

**N**OW and then the American steel industry is viewed as having reached a stage in which changes will be fewer and of less moment than in the formative days of the eighteen-eighties and nineties. On the contrary the suggestion of all the evolution in selling and operating practice since the days of the "Bessemer boys" is that the most characteristic feature of the business is change, and that the future will be quite as eventful in this respect as the past.

It is not so long ago that the drive for tonnage per se dominated every operation. Manufacturers accustomed to the slow and laborious puddling process, which would take all out of doors for plants to produce our present steel output, were amazed at the tonnages a Bessemer plant promised. In the early Carnegie days the slogan "Nothing can compare with high tonnage as a divisor into fixed charges" went all along the line. Minute of costs had much less attention than they receive today, for it was recognized that by greatly increasing output cost reduction would take care of itself.

Turning to changes in the selling side of the business, it will be recalled that late in the eighteen-nineties there arose the practice of mills soliciting from large users what amounted to "requirement contracts." The quantity would be set at the maximum imaginable, and cancellation or ignoring of a large part of the tonnage in a given contract was not particularly objected to by the mill, the real object of the seller having been to secure—apparently to give—an option on all the steel the consumer might use in a given period.

The practice had disadvantages, but it must have had advantages to both parties or it would not have lasted so long as it did. It is now practically past. A new style, once thought impractical, has taken its place, that of definite orders. The old idea was that the continued negotiating of orders would be disruptive of the price structure, which could better be maintained by the contract system. The steadiness of steel prices in the past two years or more furnishes specific proof to the contrary.

A very great question years ago, greater than many realized at the time or than many realize now, was whether steel producers should build up lines of consumption for their own steel, finishing it into wares of actual ultimate utility, also whether large consumers of steel should undertake to produce their steel for themselves. This problem, as to the general run of the steel making and steel consuming trades, has been practically settled in

the negative. But while each party sticks to his own business there is a deep and intelligent interest in the business of the other. The steel producer studies the particular needs of the customer and the customer finds it necessary to acquaint himself with the limitations of the producer.

The earlier sellers of steel, bent on tonnage and on reduction of cost through tonnage, were not hospitable to the idea of suiting a particular shipment of steel to the special requirements of the buyer. The attitude was rather: "This is our kind of steel; if it did not perform well in a certain connection buy more tons of it so as to get the result." The scale of the present-day development of research departments is testimony to the complete reversal of that position. So also is the steep ascent of the curve of alloy-steel production in these recent years. More and more the increase in output of higher quality steel represents the effort of the steel manufacturer to cooperate with manufacturing consumers of steel in increasing the use and the life of the products of the latter.

### The Tin-Less Can

**A** PLEA for a substitute for tin cans for food containers was made at the convention last week in Atlantic City of the National Cannery Association. A member of the research laboratory of that organization is authority for the statement that cans made of lacquered black plate, welded and not soldered, have been found satisfactory in several cases. The high prices for tin in the year just passed are one cause for the agitation.

Granting relative scarcity of the metal, only about 37½ per cent of the American annual consumption of tin goes into tin plate. Substitutes for tin in other industries presumably could be advantageously investigated. Meanwhile the tin can has gained for itself a very firm position. Not only its assured serviceability in food preservation but its appeal as an attractive medium for the marketing of products will make replacement a difficult undertaking. The tin-less can will undoubtedly have to fight hard to win its way.

### Another Shipbuilding Appeal

**I**N the decade prior to the entrance of this country into the World War American shipyards turned out a maximum of 614,216 gross tons of ships in 1908 and a minimum of 225,122 gross tons in 1915, with other years from 1907 to 1916 averaging around 300,000 gross tons. In 1926 the total was 225,704 gross tons, which was 19 per cent above 1925 production. Figures compiled by THE IRON AGE and published in our issue of Jan. 6 show that American steel companies in 1926 sold approximately 300,000 tons of plates, shapes and other rolled products for ship construction. For the first time in more than three years, according to Lloyd's Register of Shipping, the world's total of merchant vessels on which construction work was under way shows a gain, and the United States stands in fourth place among the maritime nations in the amount of work in progress at shipyards. In this country, however, 24 per cent of the ships

under construction are barges or other non-propelled craft, and the bulk of 1926 contracting was for tugs, ferry boats and other vessels for domestic use rather than those of sea-going type.

To put the American shipbuilding industry in a position to survive, the Atlantic Coast Shipbuilders' Association has started a campaign in Washington for the release of contracts that the Navy Department and Shipping Board now have under consideration. The situation confronting American shipyards has become desperate, according to the secretary of that organization. He has made an appeal to the Government, representing that a number of shipyards have been shut down because of lack of work and that a like move is inevitable in the case of other yards unless work is forthcoming.

If Government shipbuilding contracts are placed in the near future it will be only a temporary remedy, and the shipbuilders are again active in behalf of legislation for the upbuilding of the American merchant marine. The granting of an outright subsidy having repeatedly failed of a majority in Congress, the shipbuilders now offer another remedy which may have a better appeal. It is in effect that a rebate be given to American shipbuilders to compensate for the higher cost of building ships in this country, and that this rebate be equivalent to the duty which would be levied

if the fabricated parts were to be brought in from other countries having lower wage rates.

We may expect the familiar response from advocates of Government purchase of surplus crops. But some time there may be recognition even by the farm bloc that the handicaps of American ship-owning and shipbuilding are largely of Government imposition—to mention only the La Follette act. There may come at length also a better appreciation than we find today of what a vigorous shipbuilding industry would be worth to the farmer, viewed only as a consumer of those supplies which he is so insistent on having the Government lift off the grain market.

**H**OW Great Britain struggled to care for its regular foreign trade in iron and steel, in the face of the prolonged, crippling coal strike, is shown graphically in the figures for exports and imports now available. As indicated elsewhere in this issue, it exported last year almost 3,000,000 tons, but while this is the lowest annual amount since 1901, save in the strike of 1921, it had to import 3,750,000 tons to maintain the position. The imports were not only a record in amount but exceeded exports for the first time, at least so far as readily obtainable records show.

## CORRESPONDENCE

### Tests of Cast Iron Pipe

*To the Editor:*—There have been three developments in the cast iron pipe industry in the United States since the close of the World War to which you have given considerable attention in your columns. I mention them in the order named so that a proper consideration may be had of the effect which they have produced upon the industry.

1. The advent of centrifugal cast iron pipe, which has been the subject of many articles, the distribution of which has met with considerable success.

2. The advent of sand spun pipe, which is fostered by certain manufacturers of sand cast pipe, and which is just now coming upon the market in volume. This product, in competition with centrifugal pipe, is making a market for itself.

3. The advent of foreign cast iron pipe, the greater portion of which has been imported by this firm, acting for the Pont-a-Mousson interests, and which, insofar as trade journals and others are concerned, has created considerable comment.

Considering the total volume of cast iron pipe sold, and the small percentage of this volume awarded to foreign cast iron pipe, the volume of comments and articles appearing has been entirely out of proportion to the circumstances. But this would naturally be true, owing to the fact that there has never before been a movement of a foreign product so close to the raw material as is cast iron pipe.

Since we have been importing French cast iron pipe, we have had numerous tests made relative to tensile strength, deflection, etc., and these tests were made by competent engineers and proved to our satisfaction that French pipe was the equal of American pipe. Due to the advent of French cast iron pipe, and the tests made upon it, many engineers have revised their opinions, during the past year or so, as to the proper chemical analyses to be specified for this product.

We therefore wish to call to your attention the fact that we believe that the headlines of the article published on page 140 of your issue of Jan. 13, relative to the test of French pipe made by the engineering mechanics section of the Bureau of Standards, may prove to be misleading. You also published a letter on page 214 of your issue of Jan. 20, giving the test results, which, upon analysis, would perhaps indicate that the conclusions given in your article of your issue of Jan. 13 were perhaps prejudged.

May we call your attention to the following facts?

1. In the tests mentioned, 42 pieces of American pipe were tested, in comparison with 6 pieces of French pipe. We understand that the material for these tests was supplied by the Consolidated Gas Co., New York, and that the test pieces were selected by Frederick de P. Hone & Co., its inspection engineers. We wish to make the statement that we do not believe the Consolidated Gas Co. intended to have any such tests made if the results were for public use, because the experience of B. Nicoll & Co. with that organization extends over a period of many years, and we have never found anything but the greatest fairness in our dealings with them.

We do not reflect upon the method of selection of samples by Messrs. Hone & Co.; nevertheless if it were intended that tests be made by the Bureau of Standards, and the results were to be published, we, or our principals, were entitled to know under what conditions the samples were to be selected, and further were entitled to be present at such time as they were selected.

Furthermore, if the results of such tests were to be made public, we must inform you that we would have insisted that exactly the same number of pieces of French pipe be selected and tested as was the case with American pipe; or else, and in addition, that the samples of the American pipe selected should have been obtained in the open market, and that the results of the average tests of each set of samples from each manufacturer should have been collated and published at the same time.

2. In the month of November, 1924, a prominent official of one of the leading gas companies of the United States visited Pont-a-Mousson factories and,



at his request and in his presence, tests were made upon the pipe manufactured by those factories, the pieces for the tests, in each case, being selected by him. The tensile strength on these pieces showed the following: 27,166 lb., 28,588 lb., 24,335 lb. The deflection at rupture, and the load at rupture, were as follows: 1—Load 2446 lb., flexure, 0.376 in.; 2—Load 2468 lb., flexure, 0.36 in.; 3—Load 2,512 lb., flexure, 0.37 in.

In the month of December, 1924, a firm of engineers of international reputation conducted a series of tests of Pont-a-Mousson pipe at the factory, and it showed practically the same results. We could mention other cases of a similar character.

3. The Bureau of Standards infers that the French pipe was cast direct from the blast furnace; but the question was not asked of us, or our principals. Had such a point been raised with us, we would immediately have shown the Bureau of Standards—if they had been good enough to give us the serial numbers of the pipe in question—the inspection certificates covering this pipe, issued by an American firm.

We wish to state that no pipe has been shipped to this market and sold under American specifications—for either water or gas purposes—that does not carry the inspection certificate of an American firm, and that has not been cast from remelted pig iron in accordance with the specifications of both the American Water Works Association and the American Gas Association.

4. Repeated photomicrographic tests on French pipe show, in comparison with American pipe, a more homogeneous structure of the former, and this is due to the fact that the French ore used by Pont-a-Mousson comes from its own mines and is put through its own blast furnaces, and, consequently, the pig iron is always of the same character, resulting in a more even product.

American manufacturers buy their pig iron from many sources and, in their cupola practice, it is necessary to mix several different grades of pig iron to get the analysis required. Naturally, under these condi-

tions, the granular structure of the pipe can not be of such a uniformity as would apply under the French practice at the Pont-a-Mousson blast furnaces and foundries.

These conditions account for the fact that we are able to guarantee a much higher tensile strength for French cast iron pipe than for the daily run of American pipe.

We assume that your publication is willing and glad to consider further facts in connection with this report of the Bureau of Standards, and if so, we are prepared to discuss the matter further. We do feel, however, that the headlines carried in your publications, under this subject and in the issues above mentioned, may lead to an inaccurate understanding of the situation. We request, therefore, that this letter be published and, if you feel so inclined, we will submit further facts in the future in connection with this discussion.

JOHN J. WHITE,  
President B. Nicoll & Co.

New York, Jan. 29.

### Seeks Information Regarding Robert Towers

To the Editor: Something like 40 to 50 years ago a man by the name of Robert Towers was in the iron business somewhere in the Eastern States. I do not know whether the business was carried under his own name or in the name of some company. Some of our people here would like to learn of Mr. Towers, who is thought to have died a bachelor leaving some money.

Herrin, Ill.

JOHN HERRIN,  
Cashier, First National Bank.

[Robert Tower was a member of the Tower family, which owned and operated the Poughkeepsie Iron Co., Poughkeepsie, N. Y. The furnace and plant of the company, on the banks of the Hudson River at Poughkeepsie, were dismantled about 25 years ago.—Editor.]

## Small Gain in January Iron Output

Estimated Returns, Collected by Wire, Show Daily Rate Increased

288 Tons Over December—Net Gain of 5 Furnaces

DATA gathered by wire on Feb. 1 from companies, which in most cases estimated the pig iron production for the last one or two days of the month, show that there was a small increase for January over December. The daily rate for January was 100,000 gross tons as contrasted with 99,712 tons per day in December—a gain of 288 tons per day for January.

The total estimated output in January was 3,100,004 tons or 18,944 tons larger than the December production of 3,091,060 tons.

There were 12 furnaces blown in and 7 blown out, a net gain for the month of 5. In December there was a net loss of 10 furnaces. There were 208 furnaces active on Feb. 1 as compared with 203 on Jan. 1.

Among the furnaces blown in during January were the Sheridan furnace in the Lebanon Valley; one Carrie furnace and the Edgar Thomson furnace of the Carnegie Steel Co. in the Pittsburgh district; the Stewart furnace in the Shenango Valley; E furnace of the Bethlehem Steel Corporation in Maryland; No. 2 Mingo furnace of the Carnegie Steel Co. in the Wheeling district; one Haselton furnace of the Republic Iron & Steel Co. and the Cherry Valley furnace in the Mahoning Valley; one furnace of the Inland Steel Co. in the Chicago district; No. 3 furnace of the Sloss-Sheffield Steel & Iron Co., No. 6 Ensley furnace of the Tennessee Coal, Iron & Railroad Co. and one Woodward furnace of the Woodward Iron Co. in Alabama.

Among the furnaces blown out or banked during January was one furnace of the Wickwire Spencer Steel Corporation in the Buffalo district; B furnace of the

Bethlehem Steel Corporation in the Lehigh Valley; one Edgar Thomson furnace of the Carnegie Steel Co. in the Pittsburgh district; the Sharpsville furnace in the Shenango Valley; No. 1 furnace of the Weirton Steel Co. in the Wheeling district; No. 2 Hubbard furnace of the Youngstown Sheet & Tube Co. and the Mattie furnace in the Mahoning Valley.

The estimated January production by districts is given in the table. The actual output for January will be published in THE IRON AGE, Feb. 10.

Pig Iron Production by Districts, Gross Tons

	Jan. (31 days)	Dec. (31 days)	Nov. (30 days)	Oct. (31 days)
New York and Mass.	212,656	210,243	218,657	224,631
Lehigh Valley.....	89,095	88,182	97,722	89,804
Schuylkill Valley...	78,609	65,283	64,716	69,221
Lower Susq. and Lebanon Valleys..	48,757	48,537	47,413	36,639
Pittsburgh district..	654,221	645,592	682,246	728,650
Shenango Valley...	105,725	96,732	93,466	109,460
Western Penna....	97,462	105,996	118,005	134,104
Maryland, Virginia and Kentucky....	89,262	88,488	87,659	90,117
Wheeling district...	130,741	128,077	111,106	109,241
Mahoning Valley...	286,549	281,275	316,586	342,437
Central and North- ern Ohio.....	302,756	321,684	347,547	345,124
Southern Ohio.....	47,790	42,892	50,757	43,843
Illinois and Indiana	551,242	557,064	568,312	602,672
Mich., Minn., Mo. Wis., Colo. and Utah.....	152,000	151,468	150,981	152,615
Alabama.....	246,726	252,932	274,604	249,584
Tennessee.....	6,403	6,615	6,870	6,000
Total.....	3,100,004	3,091,060	3,236,707	3,234,132

# Iron and Steel Markets

## Price Dips Effect Fair Bookings

Result Chiefly in Bars—Buying in Sheets and Strips Insufficient  
to Fix New Basis as Yet—Pig Iron Weak—  
January Production Tops December

WITH wide variations among even the leading companies, shipments of steel in January appeared to average 15 per cent more than in December, and specifications for February rollings were in still greater volume. Business remains highly competitive, with buyers feeling safe as to covering requirements.

Current concessions in price have been effective chiefly in lining up bookings in steel bars. To what extent definite specifying will follow, the week's developments afforded little suggestion one way or the other.

The anomalous price situation in sheets and strips resulted in so little increased buying that the dips of \$4 and \$5 a ton from prices which had held for some months promise now to give place to the basis named last week, or generally \$2 below what had obtained up to the middle of January.

Operations have been stepped up slightly in the Pittsburgh and Youngstown districts, with plans to maintain the rate through February. December thus becomes the low period in the dip in production starting last October.

January pig iron output barely exceeded that of December, but there were five more furnaces in blast on Feb. 1 than on Jan. 1. The month's production was 3,100,004 tons, or 100,000 tons a day, compared with 3,091,060 tons in December, or 99,712 tons a day.

Nine steel company furnaces went in, five of them of the United States Steel Corporation, and six went out, including one corporation stack. There was a net gain of two merchant blast furnaces, three being blown in and one going out. Of the country's total of blast furnaces, now numbering 365, there were 208 active on Feb. 1.

Keen competition rules in the pig iron market. At producing centers where prices have receded to unusually low levels bookings are in fair volume. At Cleveland, sales totaled about 25,000 tons for the fourth consecutive week. Buffalo producers booked 50,000 tons. In New York and in New England furnaces east of Buffalo have become more aggressive.

Buying of pig iron, in many cases, is prompted by the belief that the market is low rather than by pressing needs. In eastern Pennsylvania a decline of 50c. in foundry iron has been accompanied by slightly increased sales. Bessemer iron in the Valley has also receded 50c. a ton, although in that district likewise demand is not active. The market at Chicago has undergone no real test since the decline of 50c. in foundry and malleable grades a

week ago, and the scheduled blowing out of a stack next week will reduce the number of active merchant stacks in the district to four out of 10.

Building demand loomed large in the past week, covering awards for more than 52,000 tons of fabricated structural steel. Included was an office building in Philadelphia taking 15,000 tons, a convention hall in Atlantic City, N. J., calling for 12,000 tons and a hospital in Los Angeles, 9000 tons. A bridge over the Hudson River at Poughkeepsie, N. Y., taking 10,000 tons, and a Detroit office building, of 9000 tons, are two notable fresh inquiries.

The automobile trade still is cautiously buying. Automobile body sheets have not figured in reports of sheet weakness, and alloy steel specifications are heavier and prices steady.

About the last large rail business of the season has been closed with the purchase by the Rock Island of 26,000 tons, placed with the two Chicago rail makers. Orders were taken for 900 freight cars and 40 locomotives, and inquiries appeared for 1305 freight cars. The Southern Pacific covered for 11,000 tons of tie plates and 30,000 kegs of spikes and bolts, and the Boston & Maine for 7000 tons of tie plates.

Demand for wire and wire products has not taken on the proportions usual for the season, and competition at the expense of prices now and then still obtains.

Sales of large billets and slabs at \$33, Pittsburgh, and prices now obtainable on sheet bars and wire rods show \$2 a ton recession in these forms of semi-finished steel. Rather than stiffening finished steel, they have reacted to its weakness.

Expectation of a suspension in union coal mines on April 1 grows stronger, and western Pennsylvania now believes it will be of long duration, though showing no concern over coal supplies.

In a market of unusual activity, tin declined to 64.75c., New York, for spot Straits metal, the lowest since August 18, 1926. Some 3000 tons was bought. The high price last year was 72.50c., on Nov. 23.

Exports in 1926 of American iron and steel products amounted to 2,167,048 gross tons. Rolled and finished steel accounted for 1,952,594 tons, or 5½ per cent of last year's total output.

THE IRON AGE pig iron composite price fell to \$19.21, from \$19.30 last week and \$19.71 at the opening of the year. One year ago it was \$21.79. The finished steel composite price remains for a second week at 2.396c. per lb.



## A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics  
At Date, One Week, One Month, and One Year Previous

### For Early Delivery

	Feb. 1, 1927	Jan. 25, 1927	Jan. 4, 1927	Feb. 2, 1926
<b>Pig Iron, Per Gross Ton:</b>				
No. 2, fdy., Philadelphia...	\$21.76	\$22.26	\$22.26	\$23.76
No. 2, Valley furnace....	18.50	18.50	18.50	20.50
No. 2, Southern, Cin'tl....	21.69	21.69	23.69	25.69
No. 2, Birmingham.....	18.00	18.00	20.00	22.00
No. 2 foundry, Chicago*....	20.50	20.50	21.00	23.00
Basic, del'd eastern Pa....	21.50	21.50	21.50	23.00
Basic, Valley furnace....	18.00	18.00	18.00	20.00
Valley Bessemer, del. P'gh	\$20.76	21.26	21.26	22.76
Malleable, Chicago*.....	20.50	20.50	21.00	23.00
Malleable, Valley.....	18.50	18.50	18.50	20.50
Gray forge, Pittsburgh....	19.76	19.76	19.76	21.76
L. S. charcoal, Chicago....	27.04	27.04	27.04	29.04
Ferromanganese, furnace..	100.00	100.00	100.00	115.00

<b>Rails, Billets, etc., Per Gross Ton:</b>				
O.-h. rails, heavy, at mill..	\$43.00	\$43.00	\$43.00	\$43.00
Light rails at mill.....	36.00	36.00	36.00	36.00
Bess. billets, Pittsburgh...	33.00	35.00	35.00	35.00
O.-h. billets, Pittsburgh...	33.00	35.00	35.00	35.00
O.-h. sheet bars, P'gh....	34.00	36.00	36.00	36.00
Forging billets, P'gh....	40.00	40.00	40.00	40.00
O.-h. billets, Phila.....	40.30	40.30	40.30	41.30
Wire rods, Pittsburgh....	43.00	45.00	45.00	45.00
	Cents	Cents	Cents	Cents
Skelp, grvd. steel, P'gh, lb.	1.90	1.90	1.90	1.90

<b>Finished Iron and Steel,</b>				
<i>Per Lb. to Large Buyers:</i>	Cents	Cents	Cents	Cents
Iron bars, Philadelphia...	2.22	2.22	2.22	2.22
Iron bars, Chicago.....	2.00	2.00	2.00	2.00
Steel bars, Pittsburgh....	1.90	1.90	2.00	2.00
Steel bars, Chicago.....	2.10	2.10	2.10	2.10
Steel bars, New York....	2.24	2.24	2.34	2.34
Tank plates, Pittsburgh...	1.90	1.90	1.90	1.80
Tank plates, Chicago....	2.10	2.10	2.10	2.10
Tank plates, New York...	2.24	2.24	2.24	2.09
Beams, Pittsburgh.....	1.90	1.90	2.00	1.90
Beams, Chicago.....	2.10	2.10	2.10	2.10
Beams, New York.....	2.24	2.24	2.34	2.24
Steel hoops, Pittsburgh...	2.25	2.25	2.50	2.50

\*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

<b>Sheets, Nails and Wire,</b>	Feb. 1, 1927	Jan. 25, 1927	Jan. 4, 1927	Feb. 2, 1926
<i>Per Lb. to Large Buyers:</i>	Cents	Cents	Cents	Cents
Sheets, black, No. 24, P'gh	2.85	2.85	3.00	3.20
Sheets, black, No. 24, Chi-				
cago dist. mill.....	3.00	3.10	3.20	3.30
Sheets, galv., No. 24, P'gh	3.75	3.75	3.85	4.15
Sheets, galv., No. 24, Chi-				
cago dist. mill.....	3.85	3.95	4.05	4.25
Sheets, blue, 9 & 10, P'gh	2.30	2.20	2.30	2.50
Sheets, blue, 9 & 10, Chi-				
cago dist. mill.....	2.35	2.40	2.50	2.60
Wire nails, Pittsburgh....	2.60	2.60	2.65	2.65
Wire nails, Chicago dist.				
mill.....	2.65	2.65	2.70	2.70
Plain wire, Pittsburgh....	2.45	2.45	2.50	2.50
Plain wire, Chicago dist.				
mill.....	2.50	2.50	2.55	2.55
Barbed wire, galv., P'gh..	3.30	3.30	3.35	3.35
Barbed wire, galv., Chi-				
cago dist. mill.....	3.35	3.35	3.40	3.40
Tin plate, 100 lb. box, P'gh	\$5.50	\$5.50	\$5.50	\$5.50

<b>Old Material, Per Gross Ton:</b>				
Carwheels, Chicago.....	\$15.50	\$15.50	\$15.00	\$17.50
Carwheels, Philadelphia..	16.00	16.00	16.50	17.50
Heavy melting steel, P'gh..	16.50	16.75	17.00	18.00
Heavy melting steel, Phila.	15.00	15.00	15.50	16.00
Heavy melting steel, Ch'go	13.25	13.50	13.00	14.25
No. 1 cast, Pittsburgh....	15.75	16.00	16.00	17.00
No. 1 cast, Philadelphia...	17.00	17.00	17.00	18.00
No. 1 cast, Ch'go (net ton)	16.50	16.50	16.50	17.00
No. 1 RR. wrot., Phila....	17.00	17.00	17.00	18.00
No. 1 RR. wrot., Ch'go (net)	12.75	12.75	12.90	13.25

<b>Coke, Connellsville, Per Net Ton at Oven:</b>				
Furnace coke, prompt....	\$3.25	\$3.25	\$3.75	\$10.00
Foundry coke, prompt....	4.25	4.50	4.50	11.00

<b>Metals,</b>	Feb. 1, 1927	Jan. 25, 1927	Jan. 3, 1927	Feb. 2, 1926
<i>Per Lb. to Large Buyers:</i>	Cents	Cents	Cents	Cents
Lake copper, New York...	13.25	13.37½	13.50	14.12½
Electrolytic copper, refinery	13.87½	13.00	13.00	13.75
Zinc, St. Louis.....	6.57½	6.40	6.97½	8.07½
Zinc, New York.....	6.92½	6.75	7.32½	8.42½
Lead, St. Louis.....	7.20	7.30	7.62½	9.10
Lead, New York.....	7.40	7.50	7.80	9.25
Tin (Straits), New York..	66.50	65.25	67.50	62.00
Antimony (Asiatic), N. Y.	14.50	14.50	13.00	21.50

## Pittsburgh

### Steel Output Shows Slight Gain—Semi-Finished Steel Weaker—Bessemer Iron Declines

PITTSBURGH, Feb. 1.—Buying of steel shows further expansion, but it is not of the confident character it would be if there were less uncertainty over prices. While the past week has brought no further decline of moment in prices of finished products and the situation in those lines which lately have shown the greatest weakness is described as no worse than it had been, the fact remains that business is highly competitive and buyers feel perfectly safe in covering only their known requirements. The closing week of January saw some stepping up of steel ingot output, notably in the Youngstown district, and it is now estimated that steel production in this and nearby districts is close to 75 per cent. Actual requirements of the automotive industry and of the railroad car builders are heavier than they have been, and it would be surprising if, in view of the price declines since the first of the year, there was not a little extra buying.

Another factor in steel works operation is the possibility that the union coal mine suspension—now regarded as a certainty since the announced ideas of the miners and the operators are so far apart—will be of fairly lengthy duration and that it may cause considerable disturbance in the non-union fields. Some of the

increase in steel output is in preparation for such an exigency.

Semi-finished steel has begun to respond in price to the downward tendency in finished steel products. Sales of billets and slabs are noted at \$33, Pittsburgh, for large and \$34 for small, while the latter price is fairly common in Youngstown on sheet bars. Wire rods also show a recession of \$2 a ton from what has hitherto been regarded as the market. There is still a price of 2c. on bars and shapes, but unless a number of sizes of bars are specified or the order is otherwise unattractive, there are some mills that will take as little as a carload at 1.90c. The 2c. price is likewise for very small lots of structural steel.

Bessemer iron has declined 50c. a ton since a week ago, but other grades are nominally quotable at last week's prices. No great interest is being taken in the market by consumers, and the test of large tonnage inquiry is yet to be applied to foundry, malleable and basic grades. The coke market is weak, with offerings moderate but entirely adequate for current requirements. Coal is selling a little better than recently, partly because of some demand for stocking, but this development has brought about no strengthening of prices, which are low in relation to costs. The tendency is still in the direction of lower wages, one or two steel companies having cut to the scale calling for \$6 per day for day labor, effective Feb. 1.

Pig Iron.—The market shows little life. Two sales each of 500 tons of Bessemer iron constitute the largest transaction of the week. These sales were made at a reduction of 50c. a ton from the recent price, and the

market is now quotable at \$19, Valley furnace. No real test of the market on the other grades has been provided by the business offered. Basic is still quoted at \$18, Valley furnace, and malleable and No. 2 foundry at \$18.50, but these prices are strictly for single carloads and amount merely to negotiation prices so far as important tonnages are concerned. In view of the fact that there are seven or eight furnaces in this and nearby districts producing iron for market, there is the suggestion that more iron must be moving than is commonly supposed, to make possible the operation of that many stacks. Investigation, however, discloses that iron is not moving as rapidly to consumers as it is being produced, and it is probably closer to facts that some furnaces are kept going because ore is more readily marketable or convertible into money in the form of iron than in its original state. The Republic Iron & Steel Co. has put on a blast furnace in the past week, and the one idle Mingo furnace of Carnegie Steel Co. also was started up last week. The Youngstown Sheet & Tube Co. has taken off one, its Hubbard, Ohio, furnace. W. P. Snyder & Co. make the January average price of Bessemer iron from Valley furnaces \$19.283 and of basic \$18.25, compared with \$19.50 and \$18.50 respectively in December.

We quote f.o.b. Valley furnace, the freight for delivery to the Cleveland or Pittsburgh district being \$1.76 per gross ton:

Basic .....	\$18.00
Bessemer .....	19.00
Gray forge .....	18.00
No. 2 foundry .....	18.50
No. 3 foundry .....	18.00
Malleable .....	18.50
Low phosphorus copper free.....	28.00

**Ferroalloys.**—Prices are steady on the commonly used ferroalloys, but business is rather quiet. In view of the coverage that important consumers have, it would be surprising if there were much new business, but specifications against contracts are not heavy. Steel works operations are much lower than they were at this time last year, and consumers of ferromanganese who had requirement contracts last year entered large specifications for January shipment. A few steel companies that placed specific tonnages last year are still drawing against \$88 ferromanganese, but others are paying \$100. There seems to be a ready market for those tonnages of spiegeleisen not taken out by contract buyers.

**Semi-Finished Steel.**—This market is giving fresh demonstration of the fact that finished steel prices determine the prices of semi-finished steel rather than the reverse. Most makers still call the market \$35, Pittsburgh or Youngstown, on large billets and slabs and \$36 for sheet bars and small billets and slabs, but on actual business these prices have been shaded by \$2 a ton. A like situation exists in wire rods, which have sold at \$43, base Pittsburgh or Cleveland, against \$45; which hitherto has been regarded as the market. There has been no change in forging quality billets or in skelp. Business in semi-finished steel as a whole is a little better than it was a month ago, in keeping with the increase in finished steel orders, but those orders have usually been at the expense of prices and non-integrated

companies have been unwilling to shoulder all of the burden of the decline.

**Wire Products.**—Local mills disclaim having gone under \$2.50, base, per 100 lb. on bright plain wire or below \$3.50, base, on spring wire, but on all other products, notably nails, the market is irregular and slightly weaker than it has been. Business has not developed in volume, as it usually does at this time of year, and that fact has made for increased competition for orders, with the result that the preferential prices, amounting to \$1 per ton, ordinarily restricted to large jobbers, have been given on comparatively small orders in the effort of the several mills to retain consuming connections. There is still business at the full quotations in the area controlled through freight rates by local mills, but the market is quotable at a spread of \$1 a ton on those lines marketed through jobbers. Bright plain wire and spring wire are not included, as they are sold to manufacturing consumers. If there has been a price of \$2.45, base, on plain wire, it represents a translation of prices of annealed or galvanized wire, on which the usual extras for those grades have not been fully exacted.

**Rails and Track Supplies.**—Standard-section rails are moving steadily on 1927 contracts, but most of the Northern railroads have lengthened out their track-laying programs and consequently are not pressing for deliveries. There is little urgency in the demand for track accessories. Light rails are selling fairly well at recent prices. Prices are given on page 381.

**Tubular Goods.**—There is some activity in line pipe, but in other directions business is quiet, as it usually is at this time of year. The Magnolia Petroleum Co. has placed with the leading producer 200 miles of 14, 16 and 18-in. plain-end gas pipe, and the Empire Gas & Fuel Co., Bartlesville, Okla., has divided between Pittsburgh and Youngstown makers an order for between 5000 and 6000 tons of 16, 12, 8 and 6-in. plain-end pipe. The year is starting well in line pipe, but except for slightly heavier shipments to jobbers for stock, standard and oil country pipe still leave much to be desired. Competition for business in boiler tubes is again reported sharp. Discounts are given on page 381.

**Sheets.**—The experience of local makers is that prices are no lower than they were a week ago, and with some consumers disposed to buy in advance of their requirements, there is the natural hope that the market has struck a bottom. Some good-sized sales of galvanized sheets are noted at 3.75c., base Pittsburgh, and that is the ruling price, with some business going below and above that figure. On blue annealed sheets, 2.20c., base Pittsburgh, appears to be as low as any sales are being made, and 2.25c. and even 2.30c. are reported on smaller tonnages. The full range on black sheets is 2.75c. to 3c., base, with the bulk of the business at 2.80c. to 2.90c. There is little deviation from 4.15c., base, on automobile body sheets. Mill operations are somewhat heavier than they were recently, averaging slightly above 70 per cent of capacity, with production probably reaching 75 per cent of capacity.

## THE IRON AGE Composite Prices

### Finished Steel

Feb. 1, 1927, 2.396c. Per Lb.

One week ago.....	2.396c.
One month ago.....	2.453c.
One year ago.....	2.439c.
10-year pre-war average.....	1.689c.

Based on steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 87 per cent of the United States output of finished steel.

High		Low	
1926	2.453c., Jan. 5:	2.403c., May 18	
1925	2.560c., Jan. 6:	2.396c., Aug. 18	
1924	2.789c., Jan. 15:	2.460c., Oct. 14	
1923	2.824c., April 24:	2.446c., Jan. 2	

### Pig Iron

Feb. 1, 1927, \$19.21 Per Gross Ton

One week ago.....	\$19.30
One month ago.....	19.71
One year ago.....	21.79
10-year pre-war average.....	15.72

Based on average of basic iron at Valley furnace and foundry irons at Chicago, Philadelphia, Buffalo, Valley and Birmingham.

High		Low	
1926	\$21.54, Jan. 5:	\$19.46, July 13	
1925	22.50, Jan. 13:	18.96, July 7	
1924	22.38, Feb. 26:	19.21, Nov. 8	
1923	30.86, March 20:	20.77, Nov. 20	



# Mill Prices of Finished Iron and Steel Products

## Iron and Steel Bars Soft Steel

	Base Per Lb.
F.o.b. Pittsburgh mills.....	1.90c. to 2.00c.
F.o.b. Chicago.....	2.10c.
F.o.b. Philadelphia.....	2.22c. to 2.32c.
Del'd New York.....	2.24c. to 2.34c.
Del'd Cleveland.....	2.09c. to 2.19c.
F.o.b. Cleveland, sizes up to 1-in. rounds,	1.90c. to 2.00c.
F.o.b. Birmingham.....	2.05c. to 2.15c.
C.I.F. Pacific ports.....	2.35c.
F.o.b. San Francisco mills.....	2.35c. to 2.40c.

## Billet Steel Reinforcing

F.o.b. Pittsburgh mills.....	1.90c. to 2.00c.
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## Rail Steel

F.o.b. mill.....	1.80c. to 1.90c.
F.o.b. Chicago.....	1.90c. to 2.00c.

## Iron

Common iron, f.o.b. Chicago.....	2.00c.
Refined iron, f.o.b. P'gh mills.....	2.90c. to 3.00c.
Common iron, del'd Philadelphia.....	2.22c.
Common iron, del'd New York.....	2.24c.

## Tank Plates

	Base Per Lb.
F.o.b. Pittsburgh mill.....	1.90c.
F.o.b. Chicago.....	2.10c.
F.o.b. Birmingham.....	2.05c. to 2.15c.
Del'd Cleveland.....	2.09c.
Del'd Philadelphia.....	2.22c.
Del'd New York.....	2.24c.
C.I.F. Pacific ports.....	2.30c.

## Structural Shapes

	Base Per Lb.
F.o.b. Pittsburgh mills.....	1.90c. to 2.00c.
F.o.b. Chicago.....	2.10c.
F.o.b. Birmingham.....	2.05c. to 2.15c.
Del'd Cleveland.....	2.09c. to 2.19c.
Del'd Philadelphia.....	2.12c. to 2.22c.
Del'd New York.....	2.14c. to 2.24c.
C.I.F. Pacific ports.....	2.35c.

## Hot-Rolled Flats (Hoops, Bands and Strips)

	Base Per Lb.
All gages, narrower than 6 in., P'gh.	2.10c. to 2.30c.
All gages, 6 in. and wider, P'gh.....	2.00c. to 2.10c.
All gages, narrower than 6 in., Chicago,	2.44c. to 2.50c.
All gages, 6 in. and wider, Chicago,	2.34c. to 2.40c.

## Cold-Finished Steel

	Base Per Lb.
Bars, f.o.b. Pittsburgh mills.....	2.30c. to 2.40c.
Bars, f.o.b. Chicago.....	2.40c.
Bars, Cleveland.....	2.45c.
Shafting, ground, f.o.b. mill.....	*2.55c. to 3.00c.
Strips, f.o.b. Pittsburgh mills.....	2.80c. to 3.05c.
Strips, f.o.b. Cleveland mills.....	2.85c. to 3.10c.
Strips, delivered Chicago.....	3.15c. to 3.35c.

\*According to size.

## Wire Products

(To jobbers in car lots, f.o.b. Pittsburgh and Cleveland)

	Base Per Keg
Wire nails.....	\$2.60 to \$2.65
Galv'd nails, 1-in. and longer.....	4.60 to 4.65
Galv'd nails, shorter than 1-in.....	4.85 to 4.90
Galvanized staples.....	3.30 to 3.35
Polished staples.....	3.05 to 3.10
Cement coated nails.....	2.60 to 2.65

	Base Per 100 Lb.
Bright plain wire, No. 9 gage.....	\$2.45 to \$2.50
Annealed fence wire.....	2.60 to 2.65
Spring wire.....	3.50
Galv'd wire, No. 9.....	3.05 to 3.10
Barbed wire, galv'd.....	3.30 to 3.35
Barbed wire, painted.....	3.05 to 3.10
Chicago district mill and delivered Chicago prices are \$1 per ton above the foregoing. Birmingham mill prices \$3 a ton higher; Worcester, Mass., mill \$3 a ton higher on production of that plant; Duluth, Minn., mill \$2 a ton higher; Anderson, Ind., \$1 higher.	

## Woven Wire Fence

	Base to Retailers Per Net Ton
F.o.b. Pittsburgh.....	\$65.00
F.o.b. Cleveland.....	65.00
F.o.b. Anderson, Ind.....	66.00
F.o.b. Chicago district mills.....	67.00
F.o.b. Duluth.....	68.00
F.o.b. Birmingham.....	68.00

## Sheets

### Blue Annealed

	Base Per Lb.
Nos. 9 and 10, f.o.b. Pittsburgh.....	2.15c. to 2.25c.
Nos. 9 and 10, f.o.b. Chicago dist. mill.....	2.35c. to 2.40c.
Nos. 9 and 10, del'd Philadelphia.....	2.52c. to 2.62c.
Nos. 9 and 10, f.o.b. Birmingham.....	2.50c. to 2.55c.

### Box Annealed, One Pass Cold Rolled

No. 24, f.o.b. Pittsburgh.....	2.80c. to 2.90c.
No. 24, f.o.b. Ch'go dist. mill.....	3.00c. to 3.10c.
No. 24, del'd Philadelphia.....	3.12c. to 3.32c.
No. 24, f.o.b. Birmingham.....	3.15c.

### Metal Furniture Sheets

No. 24, f.o.b. Pittsburgh, A grade.....	3.95c. to 4.05c.
No. 24, f.o.b. Pittsburgh, B grade.....	3.80c. to 3.90c.

### Galvanized

No. 24, f.o.b. Pittsburgh.....	3.70c. to 3.80c.
No. 24, f.o.b. Chicago dist. mill.....	3.85c. to 3.95c.
No. 24, del'd Philadelphia.....	4.07c. to 4.17c.
No. 24, f.o.b. Birmingham.....	4.00c. to 4.05c.

### Tin Mill Black Plate

No. 28, f.o.b. Pittsburgh.....	3.00c. to 3.05c.
No. 28, f.o.b. Chicago dist. mill.....	3.25c.

### Automobile Body Sheets

No. 20, f.o.b. Pittsburgh.....	4.15c.
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### Long Ternes

No. 24, 8-lb. coating, f.o.b. mill.....	4.30c.
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### Tin Plate

	Per Base Box
Standard cokes, f.o.b. P'gh district mills.....	\$5.50
Standard cokes, f.o.b. Gary and Elwood, Ind.....	5.60

### Terne Plate

(F.o.b. Morgantown or Pittsburgh)

(Per package, 20 x 28 in.)

8-lb. coating, 100 lb. base.....	\$11.40
8-lb. coating I.C. 11.70	
15-lb. coating I.C. 14.85	
20-lb. coating I.C. \$16.20	
25-lb. coating I.C. 17.90	
30-lb. coating I.C. 19.45	
40-lb. coating I.C. 21.65	

### Alloy Steel Bars

(F.o.b. Pittsburgh or Chicago)

S. A. E. Series Numbers	Base Per 100 Lb.
2100* (½% Nickel, 0.10% to 0.20% Carbon).....	\$3.00 to \$3.15
2300 (¾% Nickel).....	4.30 to 4.40
2500 (5% Nickel).....	5.50
3100 (Nickel Chromium).....	3.30 to 3.40
3200 (Nickel Chromium).....	4.75 to 5.00
3300 (Nickel Chromium).....	7.00 to 7.25
3400 (Nickel Chromium).....	6.25 to 6.50
5100 (Chromium Steel).....	3.30 to 3.40
5200* (Chromium Steel).....	7.00 to 7.50
6100 (Chrom. Vanadium bars).....	4.20 to 4.30
6100 (Chrom. Vanad. spring steel).....	3.80
9250 (Silicon Manganese spring steel).....	3.20 to 3.25
Carbon Vanadium (0.45% to 0.55% Carbon, 0.15% Vanad.).....	4.10 to 4.20
Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chrom., 0.15 Vanad.).....	4.20 to 4.30
Chromium Molybdenum bars (0.80—1.10 Chrom., 0.25—0.40 Molyb.).....	4.25 to 4.35
Chromium Molybdenum bars (0.50—0.70 Chrom., 0.15—0.25 Molyb.).....	3.40 to 3.50
Chromium Molybdenum spring steel (1—1.25 Chrom., 0.30—0.50 Molybdenum).....	4.50 to 4.75

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for cold-drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10 in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4 in. down to and including 2½-in. squares, the price is \$5 a gross ton above the 4 x 4 billet price.

\*Not S. A. E. specification, but numbered by manufacturers to conform to S. A. E. system.

## Rails

	Per Gross Ton
Standard, f.o.b. mill.....	\$43.00
Light (from billets), f.o.b. mill.....	36.00
Light (from rail steel), f.o.b. mill.....	34.00
Light (from billets), f.o.b. Ch'go mill.....	\$36.00 to \$38.00

## Track Equipment (F.o.b. Mill)

	Base Per 100 Lb.
Spikes, ½ in. and larger.....	\$2.80 to \$3.00
Spikes, ½ in. and smaller.....	2.90 to 3.25
Spikes, boat and barge.....	3.25
Track bolts, all sizes.....	3.90 to 4.50
Tie plates, steel.....	2.25
Angle bars.....	2.75

## Welded Pipe

Base Discounts, f.o.b. Pittsburgh District and Lorain, Ohio, Mills

### Butt Weld

Inches	Steel Black	Galv.	Inches	Iron Black	Galv.
1½.....	45	19½	1½ to 2½.....	11	+39
2.....	51	25½	2½.....	22	2
2½.....	56	42½	3.....	28	11
3.....	60	48½	3 to 1½.....	30	12
3½.....	62	50½			

### Lap Weld

2.....	55	43½	2.....	23	7
2½ to 6.....	59	47½	2½.....	26	11
7 and 8.....	56	43½	3 to 6.....	22	18
9 and 10.....	54	41½	7 to 12.....	26	11
11 and 12.....	53	40½			

### Butt Weld, extra strong, plain ends

1½.....	41	24½	1½ to 2½.....	+19	+54
2.....	47	30½	2½.....	21	7
2½.....	53	42½	3.....	28	12
3.....	58	47½	3 to 1½.....	30	14
3½.....	60	49½			
4 to 3.....	61	50½			

### Lap Weld, extra strong, plain ends

2.....	53	42½	2.....	23	9
2½ to 4.....	57	46½	2½ to 4.....	29	15
4½ to 6.....	56	45½	4½ to 6.....	28	14
7 to 8.....	52	39½	7 to 8.....	21	7
9 and 10.....	45	32½	9 to 12.....	16	2
11 and 12.....	44	31½			

To the large jobbing trade the above discounts on steel pipe are increased on black by one point, with supplementary discount of 5%, and on galvanized by 1½ points, with supplementary discount of 5%. On iron pipe, both black and galvanized, the above discounts are increased to large jobbers by one point with supplementary discounts of 5 and 2½%.

Note.—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2½ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

## Boiler Tubes

Base Discounts, f.o.b. Pittsburgh

Lap Welded Steel	Charcoal Iron
2 to 2½ in.....	27
2½ to 3 in.....	37
3 in.....	40
3½ to 3 in.....	42½
4 to 18 in.....	46
	1½ in..... + 18
	1½ to 1½ in... + 8
	2 to 2½ in..... - 2
	2½ to 3 in..... - 7
	3½ to 4½ in..... - 9

Beyond the above discounts, 5 to 7 five extra are given on lap welded steel tubes and 2 tens to 2 tens and 1 five on charcoal iron tubes.

### Standard Commercial Seamless Boiler Tubes

Cold Drawn	
1 in.....	60
1½ to 1½ in.....	52
1½ in.....	36
2 to 2½ in.....	31
2½ to 2½ in.....	39
3 in.....	45
3½ to 3½ in.....	47
4 in.....	50
4½, 5 and 6 in.....	45

### Hot Rolled

2 and 2½ in.....	34
2½ and 2½ in.....	42
3 in.....	45
3½ and 3½ in.....	50
4 in.....	53
4½, 5 and 6 in.....	43

Less carloads, 4 points less. Add \$8 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tubes list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

## Seamless Mechanical Tubing

Per Cent Off List

Carbon, 0.10% to 0.30%, base.....	55
Carbon, 0.30% to 0.40%, base.....	50
Plus differentials for lengths over 15 ft. and for commercially exact lengths. Warehouse discounts on small lots are less than the above.	

**Tin Plate.**—Most producers are booked almost to physical capacity up to July 1, but those that are not so situated need business badly and there is considerable competition for current business.

**Steel and Iron Bars.**—Large specifications from cold-finished steel bar makers are in keeping with a better movement of the latter, but, taking it as a whole, the steel bar market is not so active as it was expected to be by this time and the desire for orders is still strong enough to keep prices in the buyers' favor. The prevailing price is 1.90c., base, with 2c. now hard to obtain except on rather unattractive orders. Iron bars are sluggish, but prices are holding fairly well.

**Structural Steel.**—The market is now commonly at 1.90c., base Pittsburgh, for large structural shapes, with 2c. applying on rather undesirable specifications. Structural shops are not getting much business in this area, and some have begun to reduce their forces because there is not enough work in sight to sustain an operation of more than 60 per cent of shop capacity.

**Plates.**—This line seems to have escaped the weakness of the other major products; the explanation is probably in the fact that there is now a fairly close relation between economically operatable capacity and demand.

**Cold-Finished Steel Bars and Shafting.**—January shipments by leading local producers ran from 20 to 30 per cent greater than those of December, which, in turn, was a better shipping month than November. This is explained largely by the tonnages released and bought by automobile parts makers and by some replenishing of stocks by jobbers. The market is holding well at 2.40c., base Pittsburgh.

**Hot-Rolled Flats.**—There is still a quotation of 2.40c. for narrow strips, or hoop steel, but it is more of a quotation than a sales basis. Competition for business in all widths is still sharp, and the best that can be said of prices is that they are not materially lower than they were a week ago. Business has been stimulated by the cut in prices, some makers finding January bookings to have been close to those for the same month last year and substantially larger than in December.

**Cold-Rolled Strips.**—Business was materially larger in January than in the previous month and compared favorably with January last year, but the gain has been entirely at the expense of prices and consumers now have a supply at low prices that is going to make difficult any immediate stiffening of the market.

**Bolts, Nuts and Rivets.**—Orders for bolts and nuts are coming to makers here in fairly good volume, and January bookings generally were ahead of those of the previous month. However, business has not reached proportions that entail much expansion of output. Prices are steady. Rivets are weak, although demand is fairly active. Prices and discounts are given on page 383.

**Coke and Coal.**—Spot coke is quite plentiful for the demand, and prices are weak. No trouble is experienced in getting standard furnace coke at \$3.25 per net ton at ovens, and the market is not quotable on sales at above that price, although some producers are asking more. Spot foundry coke is quotable from \$4 to

\$4.50, with \$4.25 the ruling price on good brands. The coal market reflects a somewhat heavier demand, but with supplies too large to permit a stiffening of prices. Slack coal is easier because demands are small. The expectation of a suspension of union coal mines on April 1 grows stronger, and it is commonly believed that so far as western Pennsylvania is concerned the suspension will be of long duration, as operators in that district generally are disposed to sever all relations with the union and to keep their mines down rather than be tied up to an arrangement that does not recognize economic conditions. There is not much real concern over this prospect because of the large amount of non-union coal that is available, and any anxiety that exists is as to whether non-union production will be affected.

**Old Material.**—The market is weaker on the steel works grades and is no more than steady in other directions. Dealers who had contracts that were in danger of cancellation gave the market some support recently through purchases of tonnages in transit, but in the past week there has been little such demand and, with consumer demand also light, prices could not hold up. Dealers are now trying to buy heavy melting steel at \$16, but with no great amount of success. Actually, \$16.25 is about as low as this grade can be bought, and there were some sales at \$17, on which dealers would go to \$16.50 to cover. It is impossible to get recent prices on blast furnace grades, and heavy breakable cast is weaker. The February railroad scrap lists amount to approximately 65,000 gross tons, with the Pennsylvania offering 39,705 net tons, the Baltimore & Ohio 24,820 gross tons, the New York Central 3200 gross tons and the Pittsburgh & Lake Erie 2000 gross tons.

We quote for delivery to consumers' yards in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

Per Gross Ton	
Heavy melting steel.....	\$16.25 to \$16.50
Scrap rails.....	15.50 to 16.00
No. 1 cast, cupola size.....	15.75 to 16.25
Compressed sheet steel.....	15.25 to 15.50
Bundled sheets, sides and ends.....	14.25 to 14.50
Railroad knuckles and couplers.....	18.50 to 19.00
Railroad coil and leaf springs.....	18.50 to 19.00
Low phosphorus blooms and billet ends.....	21.00 to 21.50
Low phosphorus mill plates.....	20.50 to 21.00
Low phosphorus, light grade.....	17.50 to 18.00
Low phosphorus punchings.....	18.50 to 19.00
Steel car axles.....	21.50 to 22.00
Cast iron wheels.....	16.00 to 16.50
Rolled steel wheels.....	18.50 to 19.00
Machine shop turnings.....	12.00
Short shovelling steel turnings.....	12.00 to 12.50
Sheet bar crops.....	17.50 to 18.00
Heavy steel axle turnings.....	14.50 to 15.00
Short mixed borings and turnings.....	12.00 to 12.50
Heavy breakable cast.....	15.00 to 15.50
Cast iron borings.....	12.00 to 12.50
No. 1 railroad wrought.....	12.50 to 13.00
No. 2 railroad wrought.....	16.25 to 16.50
Railroad or automobile malleable scrap.....	17.00 to 17.50

### New England Fabricators Organize

New England steel fabricators, at a meeting on Jan. 27 formed the Structural Board of Trade of New England, an organization patterned after that of the New York fabricators, but in some respects different as to its purposes. There are 15 members, and at present a board of five governors directs the affairs of the body. C. N. Pitts, New England Structural Co., Boston; J. G. Andrews, Boston Bridge Works, Inc., Boston; A. S. Miller, Eastern Bridge & Structural Co., Worcester, Mass.; Ralph Riddle, McClintic-Marshall Co., Boston; and A. H. Shillings, Berlin Construction Co., Berlin, Conn., are the present members of the board. A chairman has not yet been chosen.

### Niles-Bement-Pond Co. to Distribute Boye & Emmes Lathes

The Boye & Emmes Machine Tool Co., Cincinnati, manufacturer of engine lathes, has appointed the Niles-Bement-Pond Co. its exclusive selling agent in all parts of the United States except Cleveland and Detroit. This arrangement on industrial business is effective immediately but on railroad business not until March 1.

### Warehouse Prices, f.o.b. Pittsburgh

	Base per Lb.
Tank plates.....	3.00c.
Structural shapes.....	3.00c.
Soft steel bars and small shapes.....	2.90c.
Reinforcing steel bars.....	2.90c.
Black sheets (No. 24 gage), 25 or more bundles.....	3.75c.
Galvanized sheets (No. 24 gage), 25 or more bundles.....	4.60c.
Blue annealed sheets (No. 10 gage), 25 or more sheets.....	3.30c.
Cold-finished shafting and screw stock—	
Rounds and hexagons.....	3.60c.
Squares and flats.....	4.10c.
Bands.....	3.60c.
Spikes, large.....	3.30c.
Small.....	3.80c. to 5.25c.
Boat.....	3.80c.
Bolts, track.....	4.90c.
Wire, black soft annealed, base per 100 lb.....	\$3.00
Wire, galvanized soft, base per 100 lb.....	3.00
Common wire nails, per keg.....	3.00
Cement coated nails, per keg.....	3.05



# Semi-Finished Steel, Raw Materials, Bolts and Rivets

## Mill Prices of Semi-Finished Steel F.o.b. Pittsburgh or Youngstown

Billets and Blooms	
	Per Gross Ton
Revolving, 4-in. and over.....	\$33.00 to \$35.00
Revolving, under 4-in. to and including 1½-in. ....	\$34.00 to 36.00
Forging, ordinary .....	40.00
Forging, guaranteed .....	45.00
Sheet Bars	
	Per Gross Ton
Open-hearth or Bessemer.....	\$36.00

Slabs	
	Per Gross Ton
8 in. x 2 in. and larger.....	\$33.00 to \$35.00
Smaller than 8 in. x 2 in. ....	34.00 to 36.00
Skelp	
	Per Lb.
Grooved .....	1.90c.
Sheared .....	1.90c.
Universal .....	1.90c.

Wire Rods	
	Per Gross Ton
*Common soft, base.....	\$42.00 to \$45.00
Screw stock .....	\$5.00 per ton over base
Carbon 0.20% to 0.40% .....	3.00 per ton over base
Carbon 0.41% to 0.55% .....	5.00 per ton over base
Carbon 0.56% to 0.75% .....	7.50 per ton over base
Carbon over 0.75% .....	10.00 per ton over base
Acid .....	15.00 per ton over base

\*Chicago mill base is \$46. Cleveland mill base, \$45 to \$45.

## Prices of Raw Materials

Ores	
Lake Superior Ores, Delivered Lower Lake Ports	
	Per Gross Ton
Old range Bessemer, 51.50% iron.....	\$4.55
Old range non-Bessemer, 51.50% iron.....	4.40
Metabi Bessemer, 51.50% iron.....	4.40
Metabi non-Bessemer, 51.50% iron.....	4.25
High phosphorus, 51.50% iron.....	4.15
Foreign Ore, c.i.f. Philadelphia or Baltimore	
	Per Unit
Iron ore, low phos., copper free, 55 to 58% iron in dry Spanish or Algeria.....	9.50c. to 10c.
Iron ore, Swedish, average 66% iron.....	9.50c.
Manganese ore, washed, 52% manganese, from the Caucasus.....	40c. to 41c.
Manganese ore, Brazilian, African or Indian, basis 50% .....	40c. to 42c.
Tungsten ore, high grade, per unit, in 60% concentrates .....	\$12.00 to \$13.50
Chrome ore, Indian basic, 48% Cr <sub>2</sub> O <sub>3</sub> , crude, c.i.f. Atlantic seaboard.....	
	Per Ton
.....	\$22.50
Molybdenum ore, 85% concentrates of MoS <sub>2</sub> , delivered .....	
	Per Lb.
.....	50c. to 55c.

Ferromanganese	
	Per Gross Ton
Domestic, 80%, furnace or seab'd.....	\$100.00
Foreign, 80%, Atlantic or Gulf port, duty paid .....	100.00

Spiegeleisen	
	Per Gross Ton Furnace
Domestic, 19 to 21% .....	\$37.00
Domestic, 16 to 19% .....	36.00

Electric Ferrosilicon	
	Per Gross Ton Delivered
50% .....	\$85.00
75% .....	145.00
Bessemer Ferrosilicon	
	Per Gross Ton Furnace
10% .....	\$35.00
11% .....	37.00
F.o.b. Jackson County, Ohio, Furnace	
	Per Gross Ton
10% .....	\$34.00
11% .....	36.00

Silvery Iron	
	Per Gross Ton
6% .....	\$26.50
7% .....	27.50
8% .....	28.50
9% .....	30.00

Other Ferroalloys	
	Per Gross Ton
Ferrotungsten, per lb. contained metal, del'd .....	\$1.08 to \$1.10
Ferrochromium, 4 to 6% carbon and up, 65 to 70% Cr., per lb. contained Cr. delivered, in carloads.....	11.50c.
Ferrovandium, per lb. contained vanadium, f.o.b. furnace .....	\$3.25 to \$4.00
Ferrocobaltititanium, 15 to 18%, per net ton, f.o.b. furnace, in carloads.....	\$200.00
Ferrophosphorus, electric or blast furnace material, in carloads, 18%, Rockdale Tenn., base, per net ton.....	\$91.00
Ferrophosphorus, electric, 24%, f.o.b. Aniston, Ala., per net ton.....	\$122.50

Fluxes and Refractories	
Fluorspar	
	Per Net Ton
Domestic, 85% and over calcium fluoride, not over 5% silica, gravel, f.o.b. Illinois and Kentucky mines.....	\$18.00
No. 2 lump, Illinois and Kentucky mines.....	\$20.00
Foreign, 85% calcium fluoride, not over 3% silica, c.i.f. Atlantic port, duty paid, .....	\$17.00 to \$17.50
Domestic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silica, f.o.b. Illinois and Kentucky mines.....	\$32.50

Fire Clay	
	Per 1000 f.o.b. Works
High Duty .....	Moderate Duty
Pennsylvania .....	\$40.00 to \$43.00 \$38.00 to \$40.00
Maryland .....	43.00 to 46.00 38.00 to 40.00
New Jersey.....	55.00 to 75.00
Ohio .....	40.00 to 43.00 38.00 to 40.00
Kentucky .....	40.00 to 43.00 38.00 to 40.00
Illinois .....	40.00 to 43.00 35.00 to 38.00
Missouri .....	40.00 to 43.00 35.00 to 38.00
Ground fire clay, per ton.....	6.50 to 7.50

Silica Brick	
	Per 1000 f.o.b. Works
Pennsylvania .....	\$40.00
Chicago .....	49.00
Birmingham .....	50.00
Silica clay, per ton.....	\$8.00 to 9.00

Magnesite Brick	
	Per Net Ton
Standard sizes, f.o.b. Baltimore and Chester, Pa. ....	\$65.00
Grain magnesite, f.o.b. Baltimore and Chester, Pa. ....	40.00

Chrome Brick	
	Per Net Ton
Standard size .....	\$45.00

## Mill Prices of Bolts, Nuts, Rivets and Set Screws

Bolts and Nuts	
(Less-than-Carload Lots)	
(F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago)	
	Per Cent Off List
Machine bolts, small, rolled threads... 60 and 10	
Machine bolts, all sizes, cut threads. 50, 10 and 10	
Carriage bolts, smaller and shorter, rolled threads .....	50, 10 and 10
Carriage bolts, cut threads, all sizes.....	50 and 10
Eagle carriage bolts.....	65 and 10
Lag bolts .....	60, 10 and 10
Flow bolts, Nos. 3 and 7 heads.....	50 and 10
(Extra of 20% for other style heads)	
Machine bolts, c.p.e. and t. nuts, ½ x 4 in., 45, 10 and 5	
Larger and longer sizes.....	45, 10 and 5
Bolt ends with hot-pressed nuts.....	50, 10 and 10
Bolt ends with cold-pressed nuts.....	45, 10 and 5
Hot-pressed nuts, blank and tapped, square, 4.00c. per lb. off list	
Hot-pressed nuts, blank or tapped, hexagons, 4.40c. per lb. off list	
C.p.e. and t. square or hex. nuts, blank or tapped .....	4.10c. per lb. off list
Washers* .....	6.75c. to 6.50c. per lb. off list

\*F.o.b. Chicago and Pittsburgh.  
The discount on machine, carriage and lag bolts is 5 per cent more than above for car lots. On hot-pressed and cold-pressed nuts the discount is 25c. more per 100 lb. than quoted above for car lots.

Bolts and Nuts	
(Quoted with actual freight allowed up to but not exceeding 50c. per 100 lb.)	
	Per Cent Off List
Semi-finished hexagon nuts:	
½ in. and smaller, U. S. S.....	80, 10, 10 and 5
¾ in. and larger, U. S. S.....	75, 10, 10 and 5
Small sizes, S. A. E.....	90, 10, 10 and 5
S. A. E., ½ in. and larger.....	75, 10, 10 and 5
Stove bolts in packages.....	50, 10 and 5
Stove bolts in bulk.....	80, 10, 5 and 2½
Tire bolts .....	60 and 5

Semi-Finished Castellated and Slotted Nuts	
(Actual freight allowed up to but not exceeding 50c. per 100 lb.)	
(To jobbers and consumers in large quantities)	
	Per 100 Net S.A.E. U.S.S.
¼-in.....	\$0.44 \$0.44
½-in.....	0.515 0.515
¾-in.....	0.62 0.66
1-in.....	0.79 0.90
1½-in.....	1.01 1.05
2-in.....	1.33 1.42
2½-in.....	1.70 1.73
Larger sizes.—Prices on application.	

Large Rivets	
	Base per 100 Lb.
F.o.b. Pittsburgh .....	\$2.30 to \$2.40
F.o.b. Chicago .....	2.60

Small Rivets	
	Per Cent Off List
F.o.b. Pittsburgh .....	70, 10 and 5 to 70 and 10
F.o.b. Cleveland .....	70, 10 and 5 to 70 and 10
F.o.b. Chicago .....	70, 10 and 5 to 70 and 10

Cap and Set Screws	
(Freight allowed up to but not exceeding 50c. per 100 lb.)	
	Per Cent Off List
Milled cap screws.....	80 and 10
Milled standard set screws, case hardened.....	80 and 5
Milled headless set screws, cut thread.....	80
Upset hex. head cap screws, U.S.S. thread, 80, 10 and 10	
Upset hex. cap screws, S.A.E. thread, 80, 10 and 10	
Upset set screws.....	80, 10 and 5
Milled studs .....	70 and 5

## Chicago

### Heavier Specifying by Railroad Car Builders—Merchant Stack to Go Out

CHICAGO, Feb. 1.—With specifications for plates, shapes and bars fully 30 per cent heavier than last week, ingot production here tends to increase. Close to 8000 tons of fresh structural inquiry has come into the market, and specifications from fabricators are the largest so far this year. Oil tank builders have entered orders for 16,000 tons of plates, virtually placing all of the outstanding inquiry, although several projects are developing in Oklahoma that will require liberal tonnages of tankage material.

Car builders have taken orders for 115 passenger cars, and the Southern Pacific has issued an inquiry for 1000 gondola cars. It is reported that 500 of the cars recently purchased by the Baltimore & Ohio will be built in Western shops. Specifications for car material are heavy and account in good measure for the large volume of orders sent to mills this week. Shipments of finished steel products have expanded a trifle, and new buying, which is still at close range and made up of numerous small orders, has grown in like proportion. The Rock Island has placed its spring delivery rail contract, the full tonnage, 26,000 in all, having been taken by Chicago producers.

The cast iron pipe market is active, and Chicago, having closed recently for about 3000 tons, is now asking for prices on 11,000 tons of large-size pipe.

The Chicago pig iron market is dull, and no large tonnage test has been made of prices. It is reported that an Iroquois stack will be blown out next week, reducing the number of active merchant blast furnaces to four out of 10. Scrap prices, definitely checked in their upward swing in the middle of last week, have now started to sag.

**Pig Iron.**—The market is dull, and No. 2 foundry iron is definitely established at \$20.50, f.o.b. local furnace. This is being quoted freely on small tonnages, and the indications are that producers would name a better price for desirable business. Users in western and southern Michigan are more active, one sale of 2000 tons of malleable being reported and another of 2000 tons of foundry iron of the 2.75 to 3.25 per cent silicon grade. Competition in that territory is keen, and Chicago producers are meeting prices quoted from the Cleveland and Toledo districts. The trade believes that an inquiry for 500 tons of foundry iron at St. Paul will be covered by resale foundry iron. Shipments from local furnaces in January were ahead of those in December as a result of orders that were released after the turn of the year. January shipments, however, were about 10 per cent below the average in 1926, which was the peak year in pig iron production in this district. A revision in operating schedules calls for one Iroquois stack to be blown out this coming week. Active merchant blast furnaces include two Iroquois, one Mayville, one Federal and the Zenith, a total of five which will be reduced to four within a week. This lower rate of operation does not indicate smaller shipments, inasmuch as more iron will be supplied to the trade by steel works blast furnaces at Indiana Harbor. In silvery both inquiries and sales are of carlot proportions. Several hundred tons of charcoal iron have been purchased at the full schedule.

Quotations on Northern foundry, high phosphorus and malleable iron are f.o.b. local furnace, and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards:

Northern No. 2 foundry, sil. 1.75 to 2.25	\$20.50
Northern No. 1 foundry, sil. 2.25 to 2.75	21.00
Malleable, not over 2.25 sil.	20.50
High phosphorus	20.50
Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago	27.04
Southern No. 2 (all rail)	24.01
Southern No. 2 (barge and rail)	22.18
Low phos., sil. 1 to 2 per cent, copper free	\$1.50 to \$2.50
Silvery, sil. 8 per cent	\$3.29
Bessemer ferrosilicon, 14 to 15 per cent	46.79

**Ferroalloys.**—The spiegeleisen situation is tight, domestic producers having withdrawn from this market. Inquiry in small lots is more active, and users are being quoted \$39, New Orleans, for the 19 to 21 per cent grade of English make. The freight rate to Chicago is \$7.56. It is reported here that one domestic producer of ferromanganese has withdrawn from the market. Several small first half contracts have been closed at \$100, seaboard, or \$107.56, delivered at Chicago.

We quote 80 per cent ferromanganese, \$107.56, delivered Chicago; 50 per cent ferrosilicon, \$85, delivered; spiegeleisen, 18 to 22 per cent, \$44.56, delivered Chicago.

**Plates.**—All told, 115 passenger cars have been placed in this market, 70 being for the Missouri Pacific, 10 for the Santa Fe and 35 for two electric railroads operating out of Chicago. Inquiry for railroad equipment is now smaller than at any time since the first of the year, including 2500 miscellaneous freight cars, 42 passenger cars, material for 500 car superstructures and 800 underframes and the necessary plates, shapes and bars for 1500 to 2000 cars that will be built in railroad shops. Specifications from car builders are now reaching mills in good volume and, in part, are responsible for the upturn in the rate of ingot production. Much of the tankage business that has been pending has been placed, the total being not far from 16,000 tons. The bulk of this consists of miscellaneous orders for delivery to Oklahoma and surrounding oil fields. Inquiry for oil tankage material now before the trade is light, but reports indicate that several projects now under way will come into the market before spring construction programs are started. Plate specifications from all sources are unusually heavy this week, being larger than for any like period in the past two years. As a result, plate production in this territory stands at 75 to 80 per cent of capacity. Deliveries on some sizes of plates have extended to three or four weeks, but on other sizes shipments can still be made promptly. The Chicago price of 2.10c. is steady, though competition from the East has cut deeply into territory that is usually protected by freight differentials. In an effort to hold trade, Chicago producers are, in some instances, meeting this competition by absorbing differentials that are no longer in their favor.

The mill quotation on plates is 2.10c. per lb., base, Chicago.

**Structural Material.**—The outstanding fabricating award is 2700 tons for a cable plant for the Western Electric Co., Hawthorne, Ill. Government objections to a bridge across the Mississippi River at Cape Girardeau, Mo., have been set aside and the contract for fabrication, calling for 4400 tons of steel, has been awarded to the American Bridge Co. The Paschen office building at Chicago will take 3000 tons, and fresh inquiry in smaller lots in and near Chicago totals not less than 3000 tons. With the exception of two or three large contracts, January awards have been in small volume, but inquiry carried over into February gives promise that building construction, particularly of the type which calls for the use of steel, will grow heavier as the winter advances. Competition for current business is keen and bids on fabricated steel give no signs of strengthening. Several large projects have developed in the West. A smelter in Arizona calls for 2500 tons, and a bridge in Idaho will take 1000 tons. Specifications for structural material this week are the heaviest in over a year. A fair share comes from structural shops, but the bulk of the tonnage has been released by car builders. The Chicago price for plain material is 2.10c., but Eastern producers are frequently meeting that price in Chicago and are taking advantage in competitive territory of the \$4 spread between Chicago and Pittsburgh prices.

The mill quotation on plain material is 2.10c. per lb. base, Chicago.

**Bars.**—Demand for mild steel bars has expanded mill operations to 80 per cent of capacity. Requirements of the general manufacturing trade have increased slightly, and railroad car builders have sent in liberal specifications. Forging companies, particularly those furnishing parts to the automotive industry, are



actively arranging heavier schedules for February. Some improvement is noted in the operations of agricultural machinery plants, especially those that have departments for the manufacture of tractors. Overproduction of cotton, with resulting low prices, has led some to believe that crops in the South will be more diversified next year and that Southern planters will be in the market this spring for a large amount of agricultural machinery. Forward contracting in soft steel bars is making headway, but in the main the average user prefers to buy close to actual requirements. Rolling schedules are well filled, and rolls are being changed less frequently. On some sizes delivery can be made promptly, but it is not unusual to find that orders must be placed at least three or four weeks in advance. Chicago quotations on mild steel bars are steady at 2.10c. Demand for iron bars is inactive. Specifications for alloy steel bars are heavier, and prices are steady. Production in this district is close to 80 per cent of capacity. Orders for rail steel bars are larger and more numerous. After a slow start this year, specifications in the final week of January were equal to those of a year ago. The greatest improvement among consumers is shown by the bed industry, but barn equipment makers are also becoming more active. Shipments of fence posts are not up to the expectations of the trade. Severe winter weather, with the promise of a late spring, are believed by some to be the factors that are holding back the demand. Contracts are being signed at 1.90c., Chicago, and small tonnages for prompt delivery are being taken at 2c. Both Chicago Heights rail steel bar mills are operating double turn.

The prices per lb. are: Mild steel bars, 2.10c. base, Chicago; common bar iron, 2c. base, Chicago; rail steel bars, 1.90c. to 2c. base, Chicago.

**Rails and Track Supplies.**—The Rock Island has purchased 26,000 tons of standard-section rails, 23,000 tons going to the Illinois Steel Co., and 3000 tons to the Inland Steel Co. Actual inquiry is light at the moment, but it is estimated in some quarters that about 20,000 tons of rails is still to come into this market from miscellaneous sources, including small railroads, traction companies and frog and switch makers. The Southern Pacific has placed 11,000 tons of tie plates, and 30,000 kegs of spikes and bolts, and the Boston & Maine has closed for 7000 tons of tie plates. Inquiry for track accessories totals about 12,000 tons. One rail mill in this district is operating on a full schedule and the other at 82 per cent of capacity.

Standard Bessemer and open-hearth rails, \$43; light rails, rolled from billets, \$36 to \$38 per gross ton, f.o.b. maker's mill.

Standard railroad spikes, 2.90c. per lb. mill; track bolts with square nuts, 3.90c. mill; steel tie plates, 2.35c. mill; angle bars, 2.75c. mill.

**Cast Iron Pipe.**—Chicago will open bids Feb. 10 on 11,000 tons of 24, 36, 42 and 48-in. pipe. On the whole,

inquiry is heavy, and makers, having rounded out their books, are now looking for better prices. In addition to the requirements of large municipalities, there is a steady demand from small users and public utilities. Chicago has placed 2900 tons of various sizes, the 6-in. going to the American Cast Iron Pipe Co. at \$35.50, base Birmingham, and the 8 and 12-in. to the United States Cast Iron Pipe & Foundry Co. and the Glamorgan Pipe & Foundry Co. at \$37, base Birmingham. The freight rate to Chicago is \$8.20. Flint, Mich., awarded 2000 tons of 6 to 16-in., Classes B and C, to James B. Clow & Sons at \$34.31, base Birmingham, or \$42.95 delivered. The United States company has taken 100 tons of pipe and fittings for Rockford, Ill., and a portion of the tonnage asked by St. Paul, Minn. Fresh inquiries include 1800 tons of 6 to 24-in. pipe for Minneapolis, a year's supply of 6 to 10-in. for Conneaut, Ohio, and 1700 tons of 6 to 16-in. pipe and 25 tons of fittings for Pontiac, Mich.

We quote per net ton, delivered, Chicago, as follows: Water pipe, 4-in., \$47.70 to \$49.20; 6-in. and over, \$43.70 to \$45.20; Class A and gas pipe, \$4 extra.

**Sheets.**—Prices of black and galvanized sheets are weaker, minimum quotations in Chicago being 3.05c. and 3.90c. respectively. The demand for blue annealed sheets is fairly steady, with prices ranging from 2.40c. to 2.45c., Chicago. On the whole, new buying is light and at short range, and since production has been held steady, mill books have been reduced so that rollings are not scheduled more than 10 days in advance.

Chicago delivered prices from mill at 3.05c. to 3.15c. for No. 24 black; 2.40c. to 2.45c. for No. 10 blue annealed; 3.90c. to 4c. for No. 24 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

**Reinforcing Bars.**—This market is unusually dull. Contracts for 100 tons each or over are few in number, and the aggregate of smaller awards is not so heavy as earlier in the month. Fresh inquiry is also dragging, and there is more evidence that building promoters are having difficulty in financing some of the large projects. A club building requiring 1300 tons, a theater calling for 500 tons, and 1000 tons for two apartment hotels have been before the trade for some time. A filtration plant at Waukegan, Ill., and an addition to the Cook County, Ill., jail, requiring together about 1200 tons, are active and may be placed this week. With the bulk of old quotations out of the way, dealers are holding prices for billet steel reinforcing bars out of Chicago warehouses at 2.30c. per lb. as the minimum and at 2.75c. on lots of 10 tons and less. Recent contracts and new projects are shown on page 395.

**Bolts, Nuts and Rivets.**—Specifications from the manufacturing trade are heavier, due in some measure to greater activity in the automotive industry. New buying, particularly by the jobbing trade, is in larger volume. Large rivets, at \$2.60, base, per 100 lb., lack strength.

**Old Material.**—Less activity is shown in this market, and the upward tendency in prices has been checked. Sales are few in number, being limited largely to such tonnage as appears on track from day to day. Dealers hesitate to put scrap on the ground, and the urge to sell it as it comes out is a factor that, some believe, will eventually bring lower prices. Users are offering \$13.50 to \$13.75 per gross ton for heavy melting steel, and dealers' trades are less active in this grade at \$13.65 per gross ton. A small lot of cast iron carwheels was taken at \$15.75 per gross ton, delivered. A moderate demand for low phosphorus grades is coming from steel foundries, but scrap used by gray iron melters is very quiet. Reports that a large steel producer would come into the market for a round tonnage of heavy melting steel appear to be without foundation. The production of borings has been low during the past month and a half, and the supply does not appear to be in proportion to the demand. The Penn-

#### Warehouse Prices, f.o.b. Chicago

	Base per Lb.
Plates and structural shapes.....	3.10c.
Mild steel bars.....	3.00c.
Reinforcing bars, billet steel.....	2.30c. to 2.75c.
Cold-finished steel bars and shafting—	
Rounds and hexagons.....	3.60c.
Flats and squares.....	4.10c.
Hoops.....	4.15c.
Bands.....	3.65c.
No. 24 black sheets.....	3.05c. to 3.15c.
No. 10 blue annealed sheets.....	2.40c. to 2.45c.
No. 24 galvanized sheets.....	3.90c. to 4.00c.
Standard railroad spikes.....	3.55c.
Track bolts.....	4.55c.
Structural rivets.....	3.50c.
Boiler rivets.....	3.70c.
	Per Cent Off List
Machine bolts.....	50 and 5
Carriage bolts.....	47½
Coach or lag screws.....	55 and 5
Hot-pressed nuts, squares, tapped or blank,	
.....	3.25c. off per lb.
Hot-pressed nuts, hexagons, tapped or blank,	
.....	3.75c. off per lb.
No. 8 black annealed wire, per 100 lb.....	\$3.20
Common wire nails, base per keg.....	3.05
Cement coated nails, base per keg.....	3.05

(Concluded on Page 397)

## New York

### Further Shading in Pig Iron—Steel Buying for Buildings and Railroads

NEW YORK, Feb. 1.—With increased selling pressure in the pig iron market, a good volume of business continues to be driven in. It is evident, however, that some melters are buying because they regard prices as low rather than because of a pressing need for additional metal. Although the present weakness in this market started as a result of more aggressive solicitation on the part of steel company furnaces following the decline in mill bookings, Buffalo furnaces appear to be holding to a minimum of \$18, furnace, for foundry iron, although silicon differentials are sometimes waived. Producers located east of Buffalo, however, have taken business in some instances at prices that figure back to less than \$18, base Buffalo. This has been particularly true in the New England States, where competition has been unusually keen. Sales by local brokers during the past week totaled about 15,000 tons. Comparatively few large individual tonnages were sold. Abendroth Brothers, Port Chester, N. Y., have closed for 1000 tons of foundry for early shipment. The Worthington Pump & Machinery Corporation has placed 250 tons of No. 1X for its Buffalo plant. The New York Air Brake Co. is in the market for 500 tons of foundry and 1000 tons of malleable for its Watertown, N. Y., works. In New England the Whitin Machine Works, Whitinsville, Mass., has bought 2000 tons of foundry. Another New England melter is inquiring for 2000 tons of foundry for early shipment.

We quote per gross ton delivered in the New York district as follows, having added to furnace prices \$1.39 to \$2.52 freight from eastern Pennsylvania, \$4.91 from Buffalo and \$5.54 from Virginia:

East. Pa. No. 2 fdy., sil. 1.75 to 2.25	\$22.39 to \$23.52
East. Pa. No. 2X fdy., sil. 2.25 to 2.75	22.89 to 24.02
East. Pa. No. 1X fdy., sil. 2.75 to 3.25	23.39 to 24.52
Buffalo fdy., sil. 1.75 to 2.25 (all rail)	22.91
No. 2 Virginia fdy., sil. 1.75 to 2.25	26.54 to 27.04

**Finished Steel.**—The only notable increases in steel buying in January were for structural steel buildings and railroad cars and locomotives. Otherwise the month did not bring the improvement that had been looked for, and the opening of February leaves the steel trade in this district still in doubt as to where any marked increase in volume is coming from. Although the view obtains in some quarters that the worst of the weak price situation is over, weakness seems to be more accentuated in certain lines, notably in sheets and hot and cold-rolled strip steel. Prices have come out in this district and in New England in the past week which formerly were noted principally in the Cleveland and Youngstown districts. Blue annealed sheets are the weakest product, largely on account of the competition of makers of strip sheets, and prices have ranged from 2.05c. to 2.20c., Pittsburgh, although 2.05c. has been given in only a few instances. Sales at 2.10c. and 2.15c., however, are more common. Prices on black sheets range from 2.80c. to 2.90c., Pittsburgh, the latter figure representing the top of the market on car-load lots or more. Sales are reported as low as 2.75c. Galvanized sheets have been sold at 3.70c. and 3.75c., Pittsburgh, with 3.65c. having been quoted where competition was unusually keen. The usual differential of \$2 or more a ton between wide and narrow hot-rolled strips is being rather generally disregarded, and the market ranges down to 2c., Pittsburgh, with practically no established price. Cold-rolled strip has reached a minimum of 2.80c., Pittsburgh, with some mills willing to disregard the differentials on small tonnages. Some of the steel bar mills show a disposition not to pass along the 1.90c. quotation to small buyers, who in several instances have met with refusal when requesting alteration of the price in their contracts. However, on the more desirable tonnages 1.90c., Pittsburgh, has become fairly common. Structural shapes may be

bought in lots of 1000 tons or more at prices as low as 1.80c., Pittsburgh, with 1.90c. easily obtainable on the smaller tonnages. Prices on fabricated structural steel continue at low levels. Some producers of wire products still are asking 2.50c., Pittsburgh, for plain wire and 2.65c. for nails, but concessions of \$1 a ton are being offered by others on attractive lots. Quotations on spring wire, however, are said to be held firmly at 3.50c. per lb., Pittsburgh.

We quote mill shipments, New York delivery, as follows: Soft steel bars, 2.24c. to 2.34c. per lb.; plates, 2.24c.; structural shapes, 2.14c. to 2.24c.; bar iron, 2.24c.

**Cast Iron Pipe.**—There is still little municipal inquiry for cast iron gas and water pipe, but private business is becoming more active. A recent inquiry by a privately owned company for about 2000 tons of 4-in., 6-in. and 8-in. pipe is reported to have brought out a price from a Northern maker that was equivalent to about \$36 per ton, Birmingham. On the whole, however, the market is firmer, particularly on the smaller

### Warehouse Prices, f.o.b. New York

	Base per Lb.
Plates and structural shapes.....	3.34c.
Soft steel bars and small shapes.....	3.24c.
Iron bars.....	3.24c.
Iron bars, Swedish charcoal.....	7.00c. to 7.25c.
Cold-finished steel shafting and screw stock—	
Rounds and hexagons.....	4.00c.
Flats and squares.....	4.50c.
Cold-rolled strip, soft and quarter hard..	5.75c.
Hoops.....	4.49c.
Bands.....	3.99c.
Blue annealed sheets (No. 10 gage).....	3.89c.
Long terne sheets (No. 24 gage).....	5.80c.
Standard tool steel.....	12.00c.
Wire, black annealed.....	4.50c.
Wire, galvanized annealed.....	5.15c.
Tire steel, 1½ x ½ in. and larger.....	3.30c.
Smooth finish, 1 to 2½ x ¼ in. and larger.....	3.65c.
Open-hearth spring steel, bases.....	4.50c. to 7.00c.

	Per Cent Off List
Machine bolts, cut thread.....	40 and 10
Carriage bolts, cut thread.....	30 and 10
Coach screws.....	40 and 10
Boiler Tubes—	Per 100 Ft.
Lap welded steel, 2-in.....	\$17.33
Seamless steel, 2-in.....	20.24
Charcoal iron, 2-in.....	25.00
Charcoal iron, 4-in.....	67.00

	Black	Galv.
<b>Standard Steel—</b>		
½-in. butt.....	46	29
¾-in. butt.....	51	37
1-in. butt.....	53	39
2½-6-in. lap.....	48	35
7 and 8-in. lap.....	44	17
11 and 12-in. lap.....	37	12
<b>Wrought Iron—</b>		
½-in. butt.....	4	+19
¾-in. butt.....	11	+9
1-1½-in. butt.....	14	+6
2-in. lap.....	5	+14
3-6-in. lap.....	11	+6
7-12-in. lap.....	3	+16

	Prime	Seconds
<b>Tin Plate (14 x 20 in.)</b>		
Coke, 100 lb. base box.....	\$6.45	\$6.20
Charcoal, per box—	A	AAA
IC.....	\$9.70	\$12.10
IX.....	12.00	14.25
IXX.....	13.90	16.00

<b>Terne Plate (14 x 20 in.)</b>	
IC—20-lb. coating.....	\$10.00 to \$11.00
IC—30-lb. coating.....	12.00 to 13.00
IC—40-lb. coating.....	13.75 to 14.25

	Per Lb.
<b>Sheets, Box Annealed—Black, C. R. One Pass</b>	
No. 18 to 20.....	4.15c.
No. 22.....	4.30c.
No. 24.....	4.35c.
No. 26.....	4.45c.
No. 28*.....	4.60c.
No. 30.....	4.85c.

	Per Lb.
<b>Sheets, Galvanized</b>	
No. 14.....	4.50c. to 4.75c.
No. 16.....	4.60c. to 4.85c.
No. 18.....	4.75c.
No. 20.....	4.90c.
No. 22.....	4.95c.
No. 24.....	5.10c.
No. 26.....	5.35c.
No. 28*.....	5.60c.
No. 30.....	6.00c.

\*No. 28 and lighter, 36 in. wide, 20c. higher per 100 lb.



sizes. The city of New York opened bids today on several contracts involving a few hundred tons of water pipe. Boston opened bids the second time today on the 3000 tons of pipe, on which B. Nicoll & Co., New York, representing a Continental maker, were low bidders at the first opening.

We quote pressure pipe per net ton, f.o.b. New York in carload lots, as follows: 6-in. and larger, \$48.60 to \$50.60; 4-in. and 5-in., \$53.60 to \$55.60; 3-in., \$63.60 to \$65.60; with \$5 additional for Class A and gas pipe.

**Reinforcing Bars.**—The Laclede Steel Co., St. Louis, was the low bidder on a contract to supply 1035 tons of 30-ft. round rail steel reinforcing bars for Government use on the Panama Canal. The bids call for delivery at either Christobal or Balboa within the next 30 to 40 days, and the company's figure was 1.99½c., delivered, for the base sizes with appropriate extras for the smaller sizes. The Bethlehem Steel Co.'s bid was 2.08c., and the United States Steel Products Co. figured on a base of 2.11½c. The Fireproof Products Co. is furnishing 700 tons of bars for an industrial plant in Brooklyn, and the McClintic-Marshall Co. has taken 300 tons on a job for the Brooklyn Union Gas Co. The new State office building at Albany on which the Seglin Construction Co., Buffalo, is the general contractor, will require 800 tons of concrete bars. The number of jobs under estimate in this territory is still growing, but few sizable tonnages are being let. The following schedule of prices is apparently being maintained:

Mill prices on billet steel reinforcing bars are: 2.10c. per lb. base, Pittsburgh, on lots of less than 100 tons and 2c., base, on large lots. Reinforcing bars out of New York warehouse are quoted at 3.15c. per lb., delivered at job, and out of Youngstown warehouse, at 2.50c., Youngstown, or 2.87½c., delivered New York.

**Old Material.**—The downward movement of prices on all grades continues, apparently with plenty of material available. No. 1 heavy melting steel is being purchased at \$15 per ton, delivered eastern Pennsylvania, and a few brokers are offering only \$14.50 per ton, delivered. A consumer in Bethlehem, Pa., has made a standard reduction of 50c. per ton on shipments of T-rails that measure more than 4 ft. A reduction of \$1 per ton has been exacted for some time on girder rails found to be oversize so that cutting is necessary. Borings and turnings are lower, with brokers offering \$11 per ton, delivered, to a consumer in Bethlehem. Yard steel is being purchased at \$12 to \$13 per ton, delivered, the price depending upon whether the delivery is Pottsville, Harrisburg or Phoenixville, Pa. Most other grades are off 25c. to 50c. per ton in brokers' offering prices.

Buying prices per gross ton, New York, follow:

Heavy melting steel (yard).....	\$8.50 to \$9.00
Heavy melting steel (railroad or equivalent) .....	11.50 to 12.35
Rails for rolling.....	12.25 to 12.75
Steel car axles.....	17.50 to 18.00
Iron car axles.....	24.00 to 24.50
No. 1 railroad wrought.....	13.00 to 14.00
Forge fire .....	9.00 to 9.50
No. 1 yard wrought, long.....	12.00 to 13.00
Cast borings (steel mill).....	8.75
Cast borings (chemical).....	12.50 to 13.00
Machine shop turnings.....	8.25 to 8.75
Mixed borings and turnings.....	8.25 to 8.75
Iron and steel pipe (1 in. diam., not under 2 ft. long).....	9.75 to 10.25
Stove plate (steel mill).....	9.25 to 9.75
Stove plate (foundry).....	10.50 to 11.00
Locomotive grate bars.....	9.75 to 10.00
Malleable cast (railroad).....	14.00 to 14.50
Cast iron carwheels.....	11.50 to 12.00
No. 1 heavy breakable cast.....	11.75 to 12.00

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

No. 1 machinery cast.....	\$15.00 to \$15.50
No. 1 heavy cast (columns, building materials, etc.), cupola size	13.50 to 14.00
No. 2 cast (radiator, cast boilers, etc.) .....	12.50 to 13.00

**Warehouse Business.**—Purchasing from stock is increasing slightly, but orders are still confined to small lots. Prices are generally unchanged, and there is little inclination to shade. Recently efforts have been made to bring all sellers of No. 16 gage and heavier galvanized sheets to a basis of 5.35c. per lb. on these sizes, but the market continues to range from 4.60c.

per lb. for No. 16 gage, based on 5.10c. per lb. base, to 4.85c. per lb., based on 5.35c. per lb. base.

**Coke.**—Purchasing of both standard foundry and furnace coke is moderate, and prices generally are unchanged. Except on distress tonnages for spot shipment, sales are being made with provision for giving the benefit of expected wage reductions to the buyer. Standard foundry coke ranges from \$4.25 to \$4.75 per net ton, Connellsville, and standard furnace from \$3.25 to \$3.50 per ton, Connellsville. Delivered prices of foundry coke are: To northern New Jersey, \$8.28 to \$9.28; New York or Brooklyn, \$9.04 to \$10.04; Newark or Jersey City, N. J., \$8.16 to \$9.16. By-product foundry coke is quoted at \$9.59 to \$10.77 per net ton, delivered Newark or Jersey City, N. J.

## Cleveland

### More Orders for Bars and Plates—Motor Car Builders Still Cautious

CLEVELAND, Feb. 1.—Mills are getting a larger number of orders for steel bars, plates and sheets, and many want quick shipments. Some of the leading producers entered a larger tonnage in this territory in January than in corresponding month last year, but not so much as in December. There has been a moderate increase in the demand for steel from the automotive industry in the Michigan territory, but motor car builders are buying rather cautiously for their early requirements. While the output of automobiles is increasing, the industry is not yet showing signs of getting back to its full production schedules. It is evidently the policy of some of the leading motor car builders not to manufacture cars in excess of sales to dealers.

Steel bar consumers in this territory are showing hesitation about buying ahead because of the local price situation. While 2c., Cleveland, is the common local quotation on steel bars, the round-lot price is 1.90c., Cleveland, and there are unconfirmed reports of a price of 1.80c. on attractive business. Outside mills quote steel bars at 1.90c. to 2c., Pittsburgh, and are taking considerable small-lot business at the higher price. Shops fabricating plates are figuring on considerable work, and inquiries for plates have improved. These include one for 300 tons for stills and other oil refinery work. The plate market is firm at 1.90c., Pittsburgh. Structural material ranges from 1.90c. to 2c., Pittsburgh. There is little inquiry in the building field. The Canadian National Railways are figuring with American shops for 35 locomotives and, it is understood, will place 50 locomotives with Canadian shops.

**Pig Iron.**—Sales are holding to recent volume and more interest is being shown in second quarter contracts, although some consumers are inclined to buy only for immediate requirements. Some business was placed during the week by Detroit automobile foundries. Virtually no orders have come from this source for several weeks, as considerable iron had been carried over from the last quarter. The market continues extremely competitive, and Cleveland producers with their present prices appear to dominate the price situation in Ohio, western Indiana and Michigan. While the ruling local quotation for outside shipment on foundry and malleable iron is \$18, furnace, this is either being shaded to a \$17.50 base or the 50c. silicon

### Warehouse Prices, f.o.b. Cleveland

	Base per Lb.
Plates and structural shapes.....	3.00c.
Mild steel bars.....	3.00c.
Cold-finished rounds and hexagons.....	3.90c.
Cold-finished flats and squares.....	4.40c.
Hoops and bands.....	3.45c.
No. 24 black sheets.....	3.65c.
No. 10 blue annealed sheets.....	3.15c.
No. 24 galvanized sheets.....	4.50c.
No. 9 annealed wire, per 100 lb.....	\$3.00
No. 9 galvanized wire, per 100 lb.....	3.45
Common wire nails, base, per keg.....	3.00

differential is being waived for shipment to some competitive points. Some business was placed during the week by Columbus, Ohio, foundries. This went to Cleveland furnaces. We note the sale of two lots of 200 to 300 tons each in Akron at \$18, Cleveland, or \$1 a ton lower than the delivered price of Valley iron at \$18.50, furnace. Valley producers appear to be holding closely to \$18.50, although one sale is reported at \$18.25. For Cleveland delivery the market is unchanged at \$19, furnace. There is no change from the recent price of \$19.50, furnace, in Michigan. There is a fair amount of activity in low phosphorus iron, a local interest selling several lots during the week at the usual price of \$28, furnace. A northern Ohio melter has purchased 300 tons of Southern foundry iron at \$18, Birmingham. Business is picking up with some of the malleable foundries, and this is resulting in a better inquiry for malleable iron.

Quotations below are per gross ton and except on basic and low phosphorus iron, are delivered Cleveland, including a 50c. switching charge for local iron. Ohio silvery and Southern iron prices are based on a \$3 freight rate from Jackson and \$6 from Birmingham.

Basic, Valley furnace.....	\$18.50
N'th'n No. 2 fdy., sil. 1.75 to 2.25..	19.50
Southern fdy., sil. 1.75 to 2.25...	24.00
Malleable .....	19.50
Ohio silvery, 8 per cent.....	31.50
Standard low phos., Valley furn.	28.00

**Semi-Finished Steel.**—While the market on sheet bars is nominally \$36, Cleveland or Youngstown, some of the consumers are getting shipments at \$34, mill, which is regarded as fairly representative of the market.

**Sheets.**—Orders are coming more freely from the Detroit automobile industry, which is buying only for early requirements. Sales in this territory are rather light, and most buyers want quick shipments. Extremely low prices on blue annealed sheets are not so prevalent as a week or two ago, although 2.10c., Ohio mill, is still being quoted and reports indicate that 2c., Pittsburgh, is a more common quotation. Quotations as low as 2.75c., Valley, are reported on black sheets, although a Cleveland barrel manufacturer during the week placed a round lot at 2.80c., Pittsburgh. On galvanized sheets 3.75c., Ohio mill, is commonly quoted. Automobile body sheets are firm.

**Strip Steel.**—Wide hot-rolled strip steel is still very weak. While 2c., Pittsburgh, is the common quotation, good lots will evidently bring out lower prices. On narrow strip 2.70c. is the ruling quotation. Cold-rolled strip is generally quoted at 3c., Cleveland, but mills are shading that for attractive business and particularly in the Chicago territory, where they have local mill competition. Tube stock has further declined to 2.75c., Cleveland.

**Reinforcing Bars.**—The market is soft, although no orders were placed during the week of sufficient size to test prices. The H. K. Ferguson Co. has taken a general contract for a plant for the Kroger Grocery & Baking Co., Cleveland, requiring 650 tons. Rail steel bars have settled down to 1.75c., mill, but that might be shaded. Local mills quote new billet steel bars at 1.90c. to 2c., Cleveland.

**Warehouse Business.**—The leading local sheet jobber has reduced warehouse prices \$3 a ton on black and galvanized sheets and \$2 a ton on blue annealed sheets. Warehouse prices on sheets had been irregular for some time. Warehouse business is fairly good except on sheets.

**Bolts, Nuts and Rivets.**—Orders for bolts and nuts from some of the motor car builders improved materially during the week. Consequently makers are in a better position than for several weeks. Rivets are in fair demand, and small users are specifying against \$2.60 contracts, but the market is weak for good lots.

**Coke.**—The demand for foundry coke is light, and most consumers are under contract. Prices are unchanged at \$4.50 to \$5.50, ovens, for standard Connelville foundry coke for prompt shipment. There is some activity in foundry heating coke, which is selling at \$3 to \$3.50, ovens. The price of \$7, ovens, on Ashland by-product foundry coke has been reestablished for February.

**Alloy Steel.**—The increased buying activity shown by the automotive industry is being reflected in a better demand for alloy steel from the makers of motor car parts. Orders for 2000 tons of various grades were placed by shops in this territory during the week, 1500 tons coming from two shops making forgings for Hudson cars. Prices are holding to the quoted schedule.

**Old Material.**—A Cleveland mill bought 5000 tons of heavy melting steel during the week at approximately the same price that it paid for that grade in December, and this sale has given the local market a little firmer tone, although prices in some of the adjoining districts are reported weak. Dealers are paying \$14.75 to \$15 for heavy melting steel to fill the Cleveland orders, an advance of about 25c. a ton, and they are asking around \$15.50 from consumers. Prices on compressed sheet steel and No. 2 railroad wrought have advanced 25c. to 50c. a ton. The New York Central Railroad will close Feb. 3 on a list of about 2500 tons.

We quote per gross ton delivered consumers' yards in Cleveland:

Heavy melting steel No. 1.....	\$14.50 to \$15.00
Heavy melting steel No. 2.....	14.00 to 14.50
Rolls for rolling.....	16.25 to 16.50
Rolls under 3 ft.....	18.00 to 18.50
Low phosphorus billet, bloom and slab crops.....	18.00 to 18.50
Low phosphorus sheet bar crops.....	16.50 to 17.00
Low phosphorus plate scrap.....	16.00 to 16.50
Low phosphorus forging crops.....	16.50 to 17.00
Cast iron borings.....	11.50 to 11.75
Machine shop turnings.....	9.00 to 9.25
Mixed borings and short turnings.....	11.50 to 11.75
Compressed sheet steel.....	13.75 to 14.25
No. 1 railroad wrought.....	12.50 to 12.00
No. 2 railroad wrought.....	14.50 to 14.75
Railroad malleable.....	17.00 to 17.50
Light bundled sheet stampings.....	12.00 to 12.50
Steel axle turnings.....	12.50 to 13.00
No. 1 cast.....	16.00 to 16.50
No. 1 busheling.....	12.00 to 12.50
No. 2 busheling.....	11.50 to 11.75
Drop forge flashings, 15 in. and under.....	12.00 to 12.50
Railroad grate bars.....	12.00 to 12.50
Stove plate.....	12.00 to 12.50
Pipes and flues.....	10.00 to 10.50

## Philadelphia

### Foundry Pig Iron Declines 50c.—Large Structural Jobs Placed

PHILADELPHIA, Feb. 1.—A drop of 50c. a ton on foundry iron, accompanied by slightly increased buying, largely for second quarter, is the principal development in the pig iron market. In steel there is no marked change. The volume of business is not increasing materially, and aside from three structural jobs totaling about 32,000 tons, taken by shops in this district, and the release of some orders by the Pennsylvania Railroad against its first quarter requirements, there has been no buying of outstanding importance. The steel price situation remains somewhat chaotic.

#### Warehouse Prices, f.o.b. Philadelphia

	Base per Lb.
Tank steel plates, ¼-in. and heavier.....	2.80c. to 3.00c.
Tank steel plates, ½-in.....	3.00c. to 3.20c.
Structural shapes.....	2.65c. to 3.00c.
Soft steel bars, small shapes and iron bars (except bands).....	2.90c. to 3.20c.
Round-edge iron.....	3.50c.
Round-edge steel, iron finished, 1½ x 1½ in.....	3.60c.
Round-edge steel, planished.....	4.30c.
Reinforcing steel bars, square, twisted and deformed.....	3.00c.
Cold-finished steel, rounds and hexagons.....	4.00c.
Cold-finished steel, squares and flats.....	4.50c.
Steel hoops.....	4.00c. to 4.25c.
Steel bands, No. 12 gage to ½-in., inclusive.....	3.75c. to 3.90c.
Spring steel.....	5.00c.
No. 24 black sheets.....	4.85c.
No. 10 blue annealed sheets.....	3.60c.
No. 24 galvanized sheets.....	5.80c.
Diamond pattern floor plates—	
¼-in.....	5.30c.
½-in.....	5.50c.
Rails.....	3.20c.
Tool steel.....	5.50c.
Swedish iron bars.....	6.40c.



particularly in sheets, hot and cold-rolled strip steel and structural shapes.

**Pig Iron.**—Sales of foundry iron have been made at \$21, furnace, for the base grade, and in a few instances prices have figured back to slightly less than \$21 where the freight rate to destination was against the furnace making the sale. Some furnaces are still quoting \$21.50. There has been a moderate improvement in the volume, but most of the buying has been for second quarter, as the larger consumers are well covered for this quarter. Among the week's sales was 1000 tons of Bessemer iron to a nearby forging plant and 250 tons of low phosphorus iron to the same company. A steel company which was a recent purchaser of basic iron increased its order with one furnace by a few thousand tons, the delivered price being \$21.50. The American Engineering Co., Philadelphia, is in the market for 1000 tons of foundry iron for second quarter.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76c. to \$1.63 per gross ton:

East. Pa. No. 2 plain, 1.75 to 2.25 sil.	\$21.76 to \$22.26
East. Pa. No. 2X, 2.25 to 2.75 sil.	22.26 to 22.76
East. Pa. No. 1X.	22.76 to 23.26
Basic delivered eastern Pa.	21.50 to 22.00
Gray forge	21.50 to 22.00
Malleable	22.50 to 23.00
Standard low phos. (f.o.b. New York State furnace)	25.00
Copper bearing low phos. (f.o.b. furnace)	25.00 to 26.00
*Virginia No. 2 plain, 1.75 to 2.25 sil.	26.17 to 26.67
*Virginia No. 2X, 2.25 to 2.75 sil.	26.67 to 27.17

\*The freight rate from Virginia furnaces to Philadelphia is \$5.17 per gross ton.

**Ferromanganese.**—With one producer out of the market, the other Eastern producer of ferromanganese continues to make small sales at \$100, seaboard.

**Billets.**—Nominal quotations are \$35, Pittsburgh, for rerolling billets and \$40 for forging billets, with concessions occasionally being given on special heats.

**Plates.**—Although plate orders are in about the same volume as in recent weeks, the mills are seldom able to make up schedules for more than a week, so marked is the tendency among buyers to order material only as they have urgent need for it and then requesting almost immediate shipment. Quotations remain at 1.90c., Pittsburgh.

**Structural Shapes.**—The general run of fabricated steel awards is not large, but in the past week three fairly large tonnages were placed with fabricating shops of this district. The American Bridge Co. will fabricate 15,000 tons for the building to be erected on Broad Street, Philadelphia, by the Fidelity-Philadelphia Trust Co. and also 12,000 tons for a municipal convention hall at Atlantic City. The Phoenix Bridge Co. has received an order for 4700 tons for New Jersey State Highway Commission work in Jersey City, N. J. On plain material, quotations of 1.90c., Pittsburgh, have now become quite common, with 2c. applying on small orders. There are mills, however, which are taking even small lots at 1.90c. On the larger tonnages the price is governed by several factors: the locality into which the material is going, the size and character of the rolling and the competition among fabricators. In such cases 1.80c., Pittsburgh, has been quoted, with strong indications that even lower prices have been given in special circumstances. January brought a fair increase in the volume of business.

**Steel Bars.**—Not all bar mills are quoting 1.90c., Pittsburgh, to small users, but this price has become more common in the past week even on lots which ordinarily do not command the utmost price consideration. The decline from 2c. has not brought out an increased volume of business, buyers showing some hesitation in placing orders at 1.90c.

**Sheets.**—Sellers predict that the decline in sheet prices has run its course. Some of the mills which have made the lowest prices are said to be less inclined to repeat these quotations in view of the fact that the competition for orders has carried the market to extremes that probably had not been expected. The situation may furnish its own corrective. Practically

all of the business recently taken has been for specific delivery, mills having usually declined to protect buyers beyond 30 days. Usual quotations are 2.20c. to 2.25c., Pittsburgh, on blue annealed; 3.75c. on galvanized, and 2.80c. to 2.90c. on black, but even these prices have not always been observed on the more desirable lots.

**Imports.**—Last week's imports included 167½ tons of pig iron from Germany and 589 tons of structural shapes from Belgium. The order of the United States Treasury Department applying the dumping duty on German pig iron is expected to have an almost immediate effect in reducing the shipments from that country, which in December amounted to more than 10,000 tons at the port of Philadelphia alone. Had the dumping duty been in effect in that month the amount added to the cost of the iron would have been in some cases \$4 or \$5 a ton.

**Old Material.**—Sales of 15,000 to 20,000 tons of heavy melting steel to Eastern mills have been made in the past week at \$15 and \$15.50, delivered. A fairly large tonnage of blast furnace borings and turnings was also sold to a steel company at \$11, delivered. A buyer of bundled sheets and machine shop turnings for open-hearth furnace use has reduced its offers to \$12, delivered. Scrap is coming out freely on contracts.

We quote for delivery, consuming points in this district, as follows:

No. 1 heavy melting steel	\$15.00 to \$15.50
Scrap rails	15.00 to 15.50
Steel rails for rolling	16.50 to 17.00
No. 1 low phos., heavy, 0.04 per cent and under	20.00 to 21.00
Couplers and knuckles	18.00 to 18.50
Roller steel wheels	18.00 to 18.50
Cast iron car wheels	16.00 to 16.50
No. 1 railroad wrought	17.00 to 17.50
No. 1 forge fire	13.00 to 13.50
Bundled sheets (for steel works)	12.00 to 12.50
Mixed borings and turnings (for blast furnaces)	11.00
Machine shop turnings (for steel works)	12.00 to 12.50
Machine shop turnings (for rolling mill)	12.50 to 13.00
Heavy axle turnings (or equivalent)	14.00 to 14.50
Cast borings (for steel works and rolling mill)	12.00
Cast borings (for chemical plant)	15.00 to 15.50
No. 1 cast	17.00 to 17.50
Heavy breakable cast (for steel works)	16.00
Railroad grate bars	12.50 to 13.00
Stove plate (for steel works)	12.50 to 13.00
Wrought iron and soft steel pipes and tubes (new specifications)	14.00 to 14.50
Shafting	20.00 to 21.00
Steel axles	23.00 to 24.00

## Shenango Furnace Co. Buys Ingot Mold Business

PITTSBURGH, Feb. 1.—W. P. Snyder, Jr., president Shenango Furnace Co., announced today that his company had acquired control of the Penn Mold & Mfg. Co., Dover, Ohio, for many years engaged in the manufacture of ingot molds and general castings. Harry S. Bradley, president of the Penn company, will continue in that capacity to care for the combined ingot mold business of that company and of the Shenango Furnace Co., which has a new mold foundry under construction at Sharpsville, Pa.

## American Car & Foundry Co. to Expand

The American Car & Foundry Co., 30 Church Street, New York, announces that growth of its freight car building business in St. Louis makes necessary an expansion of its St. Louis car department. This branch of the company was acquired in 1899 when the American Car & Foundry Co. was organized, it formerly having been the Missouri Car & Foundry Co.'s plant. Six and a half acres adjoining the present property in St. Louis will be acquired provided the city authorities provide for the closing of streets and alleys on this property. The St. Louis plant manufactures composite and steel box cars, coal cars, forging and miscellaneous parts and employs about 2000 men. Thomas A. Dooley is manager. As soon as plans have been completed, work will proceed on new manufacturing buildings.

## San Francisco

### Southern Pacific Inquires for Plates and Track Supplies—Buying Heavier

SAN FRANCISCO, Jan. 29 (By Air Mail).—Heavier buying and inquiry have been a feature of the week. Outstanding among fresh inquiries is that of the Southern Pacific Co., San Francisco, which includes about 6000 tons of tie plates, 150 tons of mixed bolts, 200 tons of rivets, 9000 kegs of track spikes and 830 tons of steel plates. Bids will close Feb. 10. While the situation in regard to prices remains unchanged, a number of buyers believe that mill quotations on the heavier forms of steel are not so firm as they have been. In plates it is generally believed that 2.25c., c.i.f. Coast ports, is obtainable on a fair-sized tonnage. In both merchant and reinforcing bars, mill concessions are reported but unconfirmed. Structural material, however, is consistently firm at 2.35c., c.i.f. Coast ports.

**Pig Iron.**—A local importer received a shipment during the past week of about 300 tons of German foundry iron, which is being offered at about \$24.25, duty paid, f.o.b. cars San Francisco. The Atlantic, Gulf & Pacific Co., San Francisco, placed 200 tons of No. 1 foundry iron with a Utah producer, 150 tons of English foundry with a local importer, and 50 tons of "Mayari" iron with the Bethlehem Steel Co. Quotations are unchanged.

	Per Gross Ton
*Utah basic .....	\$25.00 to \$26.00
*Utah foundry, sil. 2.75 to 3.25 ..	25.00 to 26.00
**Indian foundry, sil. 2.75 to 3.25 ..	25.00
**German foundry, sil. 2.75 to 3.25 ..	24.25

\*Delivered San Francisco.

\*\*Duty paid, f.o.b. cars San Francisco.

**Shapes.**—Lettings of fabricated structural steel for the week total 2635 tons. Fresh inquiry calls for about 500 tons. It is understood, but confirmation is lacking, that 1000 tons has been placed by the Government railroad in Manila, P. I. The largest individual letting of the week, 1150 tons, for a theater in Seattle, Wash., was taken by the Wallace Bridge & Structural Steel Co., Seattle. The Atlantic, Gulf & Pacific Co., San Francisco, has placed 200 tons of small structural material for its warehouse stock in Manila, P. I., and the Honolulu Iron Works has placed 200 tons of shapes and bars for a warehouse stock in Honolulu, T. H. Eastern mills continue to quote plain material at 2.35c., c.i.f. Coast ports.

**Plates.**—While it is generally believed that 2.25c., c.i.f. Coast ports, is obtainable on a fair-sized tonnage, most of the Eastern mills continue to quote plates at 2.30c., and the larger number of recent bookings have been closed at that price. The East Bay Water Co., Oakland, Cal., has divided 1050 tons between two San Francisco fabricators as follows: 750 tons to the Western Pipe & Steel Co., and 300 tons to the Montague Pipe & Steel Co. The Feather River Power Co., San Francisco, is receiving bids through R. C. Storice & Co. on about 800 tons to 1000 tons for its Buck Creek project, and the Southern Pacific Co., San Francisco, has come into the market for 830 tons.

**Reinforcing Bars.**—Jobs calling for small tonnages are numerous, but no letting of 100 tons or over has been reported during the week. An administration building for the county hospital in Sacramento, Cal., calls for 165 tons, and the Bull Run storage dam at

Portland, Ore., will require 150 tons. Local reinforcing bar jobbers' quotations range from 2.85c. per lb., base, on lots of 200 tons, to about 3.10c., base, on less-than-carload lots.

**Cast Iron Pipe.**—B. Nicoll & Co. have been awarded 533 tons of 20-in. Class B pipe by Seattle, Wash., and also have taken a total of 177 tons for the cities of Orange, Alhambra and Santa Barbara, Cal. El Centro, Cal., has placed 108 tons of 6 and 8-in. Class B pipe with an unnamed company. The United States Cast Iron Pipe & Foundry Co. has been awarded 233 tons of 4, 6, 8 and 10-in. Class B pipe by the Peco County Water District. Fresh inquiries include the following: Pasadena, Cal., 1600 tons of 4 to 16-in., Classes B and C, and 41 tons of fittings, bids asked, Feb. 8; Santa Cruz, Cal., 109 tons of 4-in. Class B, Feb. 3; Monterey Park, Cal., 1200 tons of 4, 6, 8 and 12-in., Class B, bids to be taken in March; San Diego, Cal., 282 tons of 4, 6 and 8-in. Class C, bids Feb. 11; Ashland, Ore., 497 tons of 4, 6, 8 and 10-in., Class B, bids being taken. The United States Cast Iron Pipe & Foundry Co. is low bidder on 721 tons for San Diego. Quotations are unchanged at \$49 to \$50, base, f.o.b. dock San Francisco.

**Steel Pipe.**—The Southern Pacific Co. is inquiring for 200 tons to 300 tons of standard pipe. Santa Barbara, Cal., will open bids Feb. 3 on 115 tons of 6-in. to 14-in. steel pipe for a pipe line. Bids are being taken by Rialto, Cal., on 366 tons of 4, 5 and 6-in. steel pipe, and Portland, Ore., is taking bids on 205 tons of 6-in. steel pipe for a pipe line for the Powell Valley Road Water District. Bids have closed on 374 tons in San Diego, Cal. San Bernardino, Cal., has placed 334 tons as follows: 296 tons with the Grinnell Co. of the Pacific, and 38 tons with the Crane Co.

**Warehouse Business.**—Local jobbers report heavier buying and also a larger number of inquiries. Quotations are unchanged.

**Coke.**—A local importer received a shipment of 2000 tons from Germany during the week, most of which, it is understood, will apply on first quarter contracts. The Atlantic, Gulf & Pacific Co., San Francisco, is understood to have placed an order with a local importer for 250 tons of English coke. Importers are not quoting on either German or English fuel except on specific inquiries.

**Old Material.**—A shipment of 4000 tons of scrap was received here during the week from Panama. Current sales are for small lots only, as most local melters are covered for their first quarter requirements.

Prices for scrap delivered to consumers' yards are as follows:

	Per Gross Ton
No. 1 heavy melting steel .....	\$10.50 to \$11.00
Scrap rails, miscellaneous .....	10.50 to 11.00
Rolled steel wheels .....	10.50 to 11.00
Couplers and knuckles .....	10.50 to 11.00
Country mixed scrap .....	7.00 to 8.00
Mixed borings and turnings .....	6.00 to 6.50

## Toronto

### Pig Iron Prices Showed Gain in Stability in 1926—Scrap More Active

TORONTO, ONT., Feb. 1.—A review of pig iron prices in 1926 shows that prices fluctuated within narrower limits and remained at lower levels than in 1925. Taking 1913 prices as 100, the index for 1926 was highest at 147.5 in January; it gradually declined to 143.5 in June, the low of the year, and then rose slightly each month to 146 in December. Current prices on pig iron in Canada are as follows:

	Per Gross Ton	Toronto	Montreal
No. 1 foundry, sil. 2.25 to 2.75 ..	\$25.80	\$28.20	
No. 2 foundry, sil. 1.75 to 2.25 ..	25.30	27.70	
Malleable .....	25.80	28.20	

**Old Material.**—While there has been no general advance, some dealers are asking prices slightly above those of two or three weeks ago and as demand tends to increase consumers appear more anxious to lay in supplies. Both mills and foundries are increasing their orders for spot delivery, while new contracts are also

### Warehouse Prices, f.o.b. San Francisco

	Base per Lb.
Plates and structural shapes .....	3.00c.
Mild steel bars and small angles .....	3.00c.
Small angles, $\frac{1}{2}$ -in. and over .....	3.00c.
Small angles, under $\frac{1}{2}$ -in. ....	3.40c.
Small channels and tees, $\frac{1}{4}$ -in. to 2 $\frac{1}{4}$ -in. ....	3.60c.
Spring steel, $\frac{1}{4}$ -in. and thicker .....	5.00c.
No. 24 black sheets .....	4.70c.
No. 28 black sheets .....	5.15c.
No. 10 blue annealed sheets .....	3.75c.
No. 24 galvanized sheets .....	5.25c.
No. 28 galvanized sheets .....	6.15c.
Common wire nails, base per keg .....	\$3.75
Cement coated nails, 100-lb. keg .....	3.75



appearing more frequently. As a result of the stronger resale demand for old material, dealers in turn are again entering the market and some large tonnages have been purchased for both stock and direct shipment to consumers. In the Montreal market the demand for iron and steel scrap is making some headway, but sales are chiefly in small tonnages for spot delivery. Inquiries and sales on export account are increasing. Dealers' buying prices are as follows:

Per Gross Ton	Toronto	Montreal
Steel turnings .....	\$8.50	\$8.00
Machine shop turnings .....	8.50	7.50
Wrought pipe .....	6.00	6.00
Rails .....	11.00	10.00
No. 1 wrought .....	11.00	14.00
Heavy melting steel .....	11.00	9.50
Steel axles .....	16.00	17.00
Axles, wrought iron .....	18.00	19.00
Boiler plate .....	10.00	8.50
Heavy axle turnings .....	9.00	8.50
Cast borings .....	8.50	7.50
Per Net Ton		
Standard carwheels .....	15.00	16.00
Malleable .....	14.00	14.00
Stove plate .....	10.00	13.00
No. 1 machinery cast .....	16.00	18.00

## Birmingham

### Bars and Shapes Decline—Blast Furnaces Accumulate Backlogs

BIRMINGHAM, Feb. 1.—Merchant blast furnaces are now obligated for their probable output in the next 60 days, and pig iron inquiries calling for deliveries through the second quarter continue to appear. The decline in the market to \$18, Birmingham, for No. 2 foundry brought out considerable buying; at the same time, it was reflected in lower prices on dependent lines, especially cast iron pressure pipe. Many consumers are pressing producers for deliveries, and surplus stocks on furnace yards are being reduced. The stock piles of most melters are still low. A fair tonnage of iron is being shipped out of the district as a result of orders booked after the recent \$2 recession in price. Ten blast furnaces in this district are producing foundry iron, 11 are on basic and one is making ferromanganese. The basic iron and the ferromanganese do not reach the open market. The new furnace of the Sloss-Sheffield Steel & Iron Co. will be ready for operation in March or early in April. With a continuation of present demand, expansion of production may include the blowing in of two stacks.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry, 1.75 to 2.25 sil.....	\$18.00
No. 1 foundry, 2.25 to 2.75 sil.....	18.50
Basic .....	13.00
Charcoal, warm blast .....	29.00

**Rolled Steel.**—Bars and structural shapes have declined \$2 a ton in sympathy with the recent reductions in the Pittsburgh market. As a consequence, bars, shapes and plates are now quoted on a common basis, i. e., 2.05c. to 2.15c., base Birmingham. The recent reductions in sheets have brought in some business. Wire and nails are in better demand, with shipments little, if any, smaller than output. The rail mill is well booked, and fresh orders are expected within the next few weeks. Railroad equipment shops have orders for more than 1200 cars, requiring about 120,000 tons of steel. The Gulf States Steel Co. is operating four of its six open-hearth furnaces, and the open-hearth department of the Tennessee Coal, Iron & Railroad Co. is running virtually at capacity. Many of the finishing mills in the district are running full, and the rail mill is operating with day and night shifts.

**Cast Iron Pipe.**—Lettings of pressure pipe are in good volume, and shops in this district are producing at a high rate. Efforts are being made to hasten deliveries so as to avoid the seasonal rush that ordinarily develops when spring approaches. The market remains at \$36, Birmingham, for 6-in. and larger diameters. The McWane Cast Iron Pipe Co. is starting production in an addition to its plant.

**Coke.**—Makers of foundry coke are now fairly well obligated through the first half of the year. Prices

range from \$5.50 to \$6, Birmingham with the latter figure ruling on spot orders.

**Old Material.**—Prices have remained unchanged for several weeks, although considerable scrap is moving and consumption is heavy. Cast iron pipe shops are melting a large tonnage of cast scrap, and open-hearth furnaces are taking heavy quantities of melting steel.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

Cast iron borings, chemical .....	\$15.00 to \$16.00
Heavy melting steel .....	13.00 to 14.00
Railroad wrought .....	11.00 to 12.00
Steel axles .....	17.00 to 18.00
Iron axles .....	17.00 to 18.00
Steel rails .....	13.00 to 14.00
No. 1 cast .....	16.00 to 17.00
Tramcar wheels .....	16.50 to 17.50
Carwheels .....	16.00 to 16.50
Stove plate .....	14.00 to 14.50
Machine shop turnings .....	8.00 to 8.50
Cast iron borings .....	8.00 to 8.50
Rails for rolling .....	15.00 to 16.00

## St. Louis

### Sales of Pig Iron Slightly Larger—Scrap Quiet but Firm

ST. LOUIS, Feb. 1.—The recent reductions in pig iron prices have resulted in somewhat heavier sales, a total of about 9000 tons having been placed. The major part of this tonnage was sold by the St. Louis Coke and Iron Corporation and was distributed among jobbing foundries, stove plants, and specialty makers. Southern iron to the amount of about 3000 tons was placed, chiefly in small scattered lots and all at \$18, base Birmingham. This price has been withdrawn during the past few days, \$19 being the minimum now quoted. The drop of 50c. per ton on Chicago iron has served to emphasize the weakness in this territory, and competition is keen, with producers in all directions showing willingness to meet figures of their competitors.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices \$2.16 freight from Chicago, \$4.42 from Birmingham, all rail, and 81c. average switching charge from Granite City:

Northern fdy., sil. 1.75 to 2.25 ..	\$22.66
Northern malleable, sil. 1.75 to 2.25 ..	22.66
Basic .....	22.66
Southern fdy., sil. 1.75 to 2.25 ..	\$22.42 to 23.42
Granite City iron, sil. 1.75 to 2.25 ..	21.81 to 22.31

**Finished Material.**—Fabricators of iron and steel report slightly better demand, but mainly in the form of small jobs. Several large propositions are pending, which are expected to crystallize into actual contracts during the next few weeks. There is a good movement of small standard structural shapes and reinforcing concrete bars, but otherwise building materials are slow. Tank plates are especially quiet, and sheet prices from first hands have declined. The leading local sheet producer reports operations at 80 and 50 per cent of capacity, respectively, in its sheet and plate departments.

**Coke.**—Demand for foundry coke continues quiet, although specifications have picked up somewhat and some inquiry from Western and Southwestern melters has appeared. The market for domestic coke has re-

### Warehouse Prices, f.o.b. St. Louis

	Base per Lb.
Plates and structural shapes .....	2.25c.
Bars, mild steel or iron .....	2.15c.
Cold-finished rounds, shafting and screw stock .....	2.75c.
No. 24 black sheets .....	4.45c.
No. 10 blue annealed sheets .....	2.60c.
No. 24 galvanized sheets .....	5.25c.
Black corrugated sheets .....	4.65c.
Galvanized corrugated sheets .....	5.30c.
Structural rivets .....	3.65c.
Boiler rivets .....	3.55c.
	Per Cent Off List
Tank rivets, $\frac{1}{2}$ -in. and smaller .....	70
Machine bolts .....	50 and 5
Carriage bolts .....	47 1/2
Lag screws .....	55 and 5
Hot-pressed nuts, square, blank or tapped ..	3.25c. off per lb.
Hot-pressed nuts, hexagons, blank or tapped ..	3.75c. off per lb.

sponded favorably to the prolonged cold weather, and by-product makers are shipping their current output. Prices were quatably unchanged on both metallurgical and domestic grades.

**Old Material.**—Purchasing by industries is still being pursued on a hand-to-mouth basis, with total sales making a poor showing. Dealers, however, are optimistic and are bidding good prices for all material coming out. There have been no specific changes in selling prices, but many of the quotations are nominal, no transactions having been recorded upon which to base them. Carwheels are plentiful and hard to sell, and cast grades continue dull. Railroad offerings included the following lists: Pullman Co., 300 tons; Big Four, 5200 tons; Pennsylvania, 39,700 tons; New Orleans Public Belt Railroad, 1100 tons; St. Paul, 6600 tons; Missouri Pacific, 5200 tons; Burlington, 5600 tons; Chicago & Alton, 900 tons, and Union Pacific, 3500 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

Per Gross Ton	
Iron rails	\$14.00 to \$14.50
Rails for rolling	15.50 to 16.00
Steel rails less than 3 ft.	16.00 to 16.50
Relaying rails, 60 lb. and under	20.50 to 23.50
Relaying rails, 70 lb. and over	26.50 to 29.00
Cast iron carwheels	14.50 to 15.00
Heavy melting steel	13.00 to 13.50
Heavy shoveling steel	13.00 to 13.50
Frogs, switches and guards cut apart	14.50 to 15.00
Railroad springs	15.50 to 16.00
Heavy axle and tire turnings	10.50 to 11.00
No. 1 locomotive tires	16.75 to 17.25
Per Net Ton	
Steel angle bars	12.50 to 13.00
Steel car axles	17.25 to 17.75
Iron car axles	21.00 to 21.50
Wrought iron bars and transoms	18.00 to 18.50
No. 1 railroad wrought	10.75 to 11.25
No. 2 railroad wrought	11.75 to 12.25
Cast iron borings	9.25 to 9.75
No. 1 busheling	10.25 to 10.75
No. 1 railroad cast	14.25 to 14.75
No. 1 machinery cast	16.50 to 17.00
Railroad malleable	12.50 to 13.00
Machine shop turnings	6.25 to 6.75
Bundled sheets	8.00 to 8.50

## Cincinnati

### Heavier Inquiry for Pig Iron—One Maker Reduces Foundry Coke 50c.

CINCINNATI, Feb. 1.—Pig iron buying in the past week has been of negligible volume, but inquiries have increased considerably. The price situation is unaltered. Lake Erie producers are accepting business at \$17.50, base furnace, although in some instances sales have been made at 50c. a ton above that figure. Southern Ohio furnaces are not willing to take orders at less than \$20, base Ironton, and their policy regarding quotations for second quarter has not yet been determined. Southern iron continues to sell at \$18, base Birmingham, but bookings have been light. Orders for Jackson County silvery have been confined principally to small lots for shipment during the next two months. Malleable iron in southern Ohio is bringing \$19.50 to

#### Warehouse Prices, f.o.b. Cincinnati

	Base per Lb.
Plates and structural shapes	3.40c.
Bars, mild steel or iron	3.30c.
Reinforcing bars	3.30c.
Hoops	4.00c. to 4.25c.
Bands	3.95c.
Cold-finished rounds and hexagons	3.85c.
Squares	4.35c.
Open-hearth spring steel	4.75c. to 5.00c.
No. 24 black sheets	4.05c.
No. 10 blue annealed sheets	3.60c.
No. 24 galvanized sheets	4.90c.
Structural rivets	3.75c.
Small rivets	.65 per cent off list
No. 9 annealed wire, per 100 lb.	\$3.00
Common wire nails, base per keg	2.95
Cement coated nails, base per 100-lb. keg	3.15
Chain, per 100 lb.	7.55
Net per 100 Ft.	
Lap welded steel boiler tubes, 2-in.	\$18.00
4-in.	38.00
Seamless steel boiler tubes, 2-in.	19.00
4-in.	39.00

\$20, base furnace, but in territory up-State is quoted at \$18.75 to \$19.50 because of competition from northern Ohio furnaces. A Dayton, Ohio, melter is inquiring for about 900 tons of Northern and Southern foundry iron, while the Ross-Meehan Foundries, Chattanooga, Tenn., are in the market for 500 tons of malleable iron. The Kalamazoo Stove Co., Kalamazoo, Mich., is expected to purchase 2000 tons of foundry iron.

Based on freight rates of \$3.69 from Birmingham and \$1.89 from Ironton, we quote f.o.b. Cincinnati:

Alabama fdy., sil. 1.75 to 2.25	
(base)	\$21.69
Alabama fdy., sil. 2.25 to 2.75	22.19
Tennessee fdy., sil. 1.75 to 2.25	21.69
Southern Ohio silvery, 8 per cent	30.39
So. Ohio fdy., sil. 1.75 to 2.25	21.89
So. Ohio malleable	\$20.64 to 21.89

**Finished Material.**—The end of the month has brought an increased volume of specifications and orders, and revised estimates for January show that business was about 15 per cent better than in December and paralleled bookings in January, 1926. Many consumers who allowed their stocks to reach an unusually low point finally have ordered material for replacement purposes, while a number of fabricators are specifying more liberally against contracts. Prices are holding well except in the sheet market, where further concessions have been made in an attempt to stimulate buying. Black sheets are down \$1 a ton from last week's quotations, the present market standing at 2.80c. base Pittsburgh. Reports of low prices on automobile body sheets are current, but the lowest quotation being made by mills in this territory is 4.15c. base Pittsburgh. Galvanized sheets are bringing 3.75c. base Pittsburgh, although a few consumers contend that they can obtain material at \$2 a ton under that figure. Blue annealed sheets have been fairly steady at 2.20c. to 2.25c. base Pittsburgh. It is understood that the reduction of prices has failed to have the desired effect of bringing out attractive tonnages for delivery during the next two months. Many buyers still feel that the market has not yet scraped bottom and that in the next two to three weeks they will be able to purchase to better advantage than at present. Demand for wire goods is light. Common wire nails are selling at \$2.65 per keg, base Ironton or Pittsburgh, and plain wire at \$2.50 per 100 lb. base Ironton or Pittsburgh. Fabricators have little work ahead of them, and unless there is a betterment in conditions in the immediate future, operating schedules will have to be cut down.

**Reinforcing Bars.**—There have been a few small awards in the past week, but there is a noticeable absence of important work. New billet stock is quoted at 2c., base Pittsburgh, and rail steel bars at 1.90c., base mill, although these prices have not been tested recently.

**Warehouse Business.**—Sales dropped off sharply in the past week, and as a result bookings in January fell slightly short of those in the same month last year, but were about equal to those in December. The Ohio River flood has handicapped the activities of several local jobbers. Quotations are firm and unchanged.

**Coke.**—While two important by-product coke companies in this territory will not change their schedule of \$10.14, delivered Cincinnati, on foundry grades during February, the Portsmouth By-Product Coke Co. has announced a reduction of 50c. a ton to \$9.64, delivered Cincinnati. Prices of by-product domestic coke, however, will not be disturbed, No. 2 nut selling at \$5.50, ovens, and egg and walnut at \$6. Specifications for by-product foundry coke in January were about 20 per cent better than those in December, and demand for domestic grades also showed a slight increase. A Peoria, Ill., consumer is expected to buy 1000 tons of either furnace or foundry coke for delivery during the next two months.

Based on freight rates of \$2.14 from Ashland, Ky., and \$2.59 from Wise County ovens and New River ovens, we quote f.o.b. Cincinnati: Wise County foundry, \$7.59 to \$8.09; New River foundry, \$10.09 to \$10.59; by-product foundry, \$9.64 to \$10.14.

**Old Material.**—Steel plants in this territory are taking a fair amount of material on contract, but some holdups of shipments are reported from the Valley district. The Big Four has a list of 5750 tons, including



2500 tons of steel rails, closing this week. Prices are steady.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

Per Gross Ton		
Heavy melting steel	12.50 to	13.00
Scrap rails for melting	12.50 to	13.00
Short rails	17.50 to	18.00
Relaying rails	26.50 to	27.00
Rails for rolling	14.00 to	14.50
Old carwheels	12.00 to	12.50
No. 1 locomotive tires	16.50 to	17.00
Railroad malleable	14.50 to	15.00
Agricultural malleable	13.50 to	14.00
Loose sheet clippings	9.00 to	9.50
Champion bundled sheets	9.50 to	10.00
Per Net Ton		
Cast iron borings	8.00 to	8.50
Machine shop turnings	7.50 to	8.00
No. 1 machinery cast	16.00 to	17.00
No. 1 railroad cast	13.00 to	13.50
Iron axes	19.50 to	20.00
No. 1 railroad wrought	9.00 to	9.50
Pipes and flues	7.50 to	8.00
No. 1 busheling	9.00 to	9.50
Mixed busheling	6.00 to	6.50
Burnt cast	7.00 to	7.50
Stove plate	9.00 to	9.50
Brake shoes	9.50 to	10.00

## Buffalo

### Pig Iron Bookings Total 50,000 Tons—Low Price on License Plate Sheets

BUFFALO, Feb. 1.—The break in the pig iron market has sent dozens of melters scurrying into the market, convinced that present prices are scraping bottom. It is probable that during the past week local furnace interests took 50,000 tons of iron, and thousands of tons are still pending. Most of the business was in malleable and foundry iron and apparently about evenly divided between first quarter and second quarter as to shipments. Several sizable individual tonnages were booked. One interest took at least a dozen lots of foundry and malleable ranging from 1000 to 3000 tons each. The prevailing market appears to have been \$18, Buffalo, on Eastern shipments and \$18.75 to \$19 on district business. Reports are current here that the Genesee furnace at Charlotte, N. Y., will blow out shortly.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

No. 2 plain fdy., sil.	1.75 to 2.25	\$18.00 to \$18.75
No. 2X foundry, sil.	2.25 to 2.75	18.50 to 19.25
No. 1X foundry, sil.	2.75 to 3.25	19.50 to 20.25
Malleable, sil. up to 2.25		18.00 to 18.75
Basic		18.00 to 19.00
Lake Superior charcoal		27.28

**Finished Material.**—An increase in specifications is a feature of the bar and shape market, with 2.265c., Buffalo, quoted generally. Sheet demand shows signs of picking up, though 2.90c., base Pittsburgh, and less have been done on No. 24 gage black. The New York State license plate tonnage is said to have gone for 2.62c., base. Mill operations are improving. The Lackawanna plant has 17 out of 24 open-hearth furnaces on, and about half of its mills are on double turn. The Donner Steel Co. has five open-hearth furnaces, or about 50 per cent, operating. The Seneca Iron & Steel Co. is operating at about 60 per cent.

**Old Material.**—One large consuming mill has become so strict in its inspection that it has virtually left the ranks of users of No. 2 steel and has placed itself among consumers of No. 1 heavy melting steel. Hitherto dealers, assuming that this mill was lenient, had been including country scrap, light structural and light automobile scrap in heavy melting steel shipments against its account. Even some No. 1 busheling went into these shipments. As a result, there

### Warehouse Prices, f.o.b. Buffalo

	Base per Lb.
Plates and structural shapes	3.40c.
Mild steel bars	3.30c.
Cold-finished shapes	4.45c.
Rounds	3.95c.
No. 24 black sheets	4.30c.
No. 10 blue annealed sheets	3.80c.
No. 24 galvanized sheets	5.15c.
Common wire nails, base per keg	\$3.90
Black wire, base per 100 lb.	3.90

have been wholesale rejections, and reductions have amounted to so much that dealers find it unprofitable to ship in many instances. From \$15.25 to \$15.50 is being offered by dealers to fill orders for this mill that will come within its specifications. Some shipments have been penalized as much as \$5 a ton. Dealers are buying a considerable tonnage in shoveling turnings, cast iron borings and stove plate. A good demand exists for stove plate.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

Heavy melting steel	\$15.00 to \$15.25
Selected No. 1 heavy melting steel	16.25 to 16.75
Low phosphorus	17.50 to 18.00
No. 1 railroad wrought	13.00 to 13.50
Carwheels	16.00 to 16.50
Machine shop turnings	9.00 to 9.50
Mixed borings and turnings	12.00 to 12.50
Cast iron borings	13.00 to 13.50
No. 1 busheling	15.00 to 15.50
Stove plate	14.50 to 14.75
Grate bars	12.00 to 12.00
Hand bundled sheets	10.50 to 11.50
Hydraulic compressed sheets	15.00 to 15.50
No. 1 machinery cast	16.00 to 16.25
Railroad malleable	16.50 to 17.00
Iron axes	24.00 to 25.00
Steel axes	16.00 to 16.50
Drop forge flashings	13.00 to 13.50

## Boston

### Further Concessions in Pig Iron—Scrap Market Is Soft

BOSTON, Feb. 1.—So keen is competition among pig iron sellers in this territory that not only are silicon differentials disregarded, but nickels and cents are being conceded to close sales. This splitting of hairs, especially by furnaces east of Buffalo, has resulted in sales of No. 2X and No. 1X at delivered prices equivalent to approximately \$17.75 to \$17.95 a ton, Buffalo furnace. One lot of 1000 tons of No. 1X, for second quarter delivery, was sold at a price equivalent to less than \$17.95, Buffalo, and numerous other lots ranging from 300 to 500 tons were closed at prices equivalent to \$17.91 up to \$18.05. A lot of 1000 tons of No. 2X New York State iron was sold to a western Massachusetts melter at a price equivalent to a shade under \$18, Buffalo. Because of the nature of prices it is difficult to establish a base price on Buffalo and east-of-Buffalo iron. Sales made in this territory the past week again approximated 15,000 tons, bringing the total for a fortnight up to better than 30,000 tons. A major portion of the iron sold recently is for deliveries straddling the first and second quarter and for second quarter. The buying movement is by no means justified by the New England melt but is due to the belief of foundries that iron is cheap. Heater makers have not bought. A Springfield, Mass., foundry is in the market for 1000 tons of No. 2X, the largest current inquiry.

We quote delivered prices per gross ton to most New England points as follows, having added \$3.65 freight from eastern Pennsylvania, \$4.91 from Buffalo, \$5.92 from Virginia, and \$6.91 to \$8.77 from Alabama:

East. Penn., sil. 1.75 to 2.25	\$24.65 to \$25.15
East. Penn., sil. 2.25 to 2.75	25.15 to 25.65
Buffalo, sil. 1.75 to 2.25	22.66 to 22.91
Buffalo, sil. 2.25 to 2.75	23.41 to 23.91
Virginia, sil. 1.75 to 2.25	27.42
Virginia, sil. 2.25 to 2.75	27.92
Alabama, sil. 1.75 to 2.25	24.91 to 26.77
Alabama, sil. 2.25 to 2.75	25.41 to 27.27

**Coke.**—The slight improvement in the demand for by-product foundry coke in New England noted a week ago did not hold. Specifications against first half contracts are coming in slowly just now, but the demand for domestic fuel holds up remarkably well, although it is not quite so heavy as a year ago when anthracite coal was less plentiful. Sales of domestic coke by the New England Coal & Coke Co. and the Providence Gas Co. are considerably larger, however, than in 1925 and previous years. Connellsville district foundry coke is easy, good quality 72-hr. fuel being offered at \$5 a ton, ovens, or around \$10.50 a ton, delivered, contrasted with \$13, delivered, the price of New England fuel. Connellsville coke is not particularly active, but is more so than it was a month ago.

**Cast Iron Pipe.**—Boston closed bids yesterday on 260 tons of fittings and will close bids today on 200 tons of 6-in., 700 tons of 8-in., 1500 tons of 12-in. and 600 tons of 16-in., a total of 3000 tons, all Class B pipe. These amounts are the same as those for which bids were recently rejected by the city owing to the wide difference between prices quoted on domestic and German pipe. Malden, Mass., has yet to award 200 tons of 6 and 12-in. pipe, bids for which closed some time ago and on which German pipe prices were the lowest. Watertown, Mass., has closed for its 1927 requirements in 6 and 16-in. pipe with the Warren Foundry & Pipe Co. No other lettings are reported. Sales of gas pipe the past week were in 10 and 15-car lots, but in the aggregate were large. Stone & Webster, Inc., is expected to close on approximately 10,000 tons of gas pipe this week. Foundries are still anxious for business in large-diameter pipe, as is attested by concessions offered. Small pipe prices remain firm. Domestic pipe quotations made openly, are as follows: 4-in., \$58.10 a ton, delivered common Boston freight rate points; 6 to 12-in., \$53.10 to \$54.10; larger pipe, \$52.10 to \$53.10. A \$5 differential is asked on Class A and gas pipe.

**Old Material.**—While no material change in the average spread of offering prices is noted, inside, or very close to inside prices are paid much more often on the small going business than outside prices, and the market in general looks and acts soft. To illustrate, the range of prices on heavy melting steel is \$10.50 to \$11 a ton on cars, but \$10.50 to \$10.60 is given more frequently than \$11. One eastern Pennsylvania steel mill is paying \$15 a ton, delivered, for this material, which figures back to \$10.10, on cars Boston. No sales have been made at that price, but some are pending. Offers on yard steel appear to average around \$8 to \$8.10, whereas a week ago there were some offers at \$8.50. Recent sales include carlots of long bundled skeleton at \$7.60 a ton, on cars, steel turnings at \$7.60, chemical borings at \$10.10 and short bundled cotton ties at \$8.10. New England foundries have paid more attention to pig iron than to machinery cast in the past fortnight.

The following prices are for gross-ton lots, delivered at consuming points:

Textile cast .....	\$18.00 to \$18.50
No. 1 machinery cast.....	17.00 to 17.50
No. 2 machinery cast.....	15.50 to 16.00
Stove plate .....	13.00 to 13.25
Railroad malleable .....	17.25 to 17.50

The following prices are offered per gross-ton lots, f.o.b. Boston rate shipping points:

No. 1 heavy melting steel.....	\$10.50 to \$10.75
No. 1 railroad wrought.....	12.00 to 12.25
No. 1 yard wrought.....	11.00 to 11.25
Wrought pipe (1 in. in diameter, over 2 ft. long).....	9.00 to 9.50
Machine shop turnings.....	7.00 to 7.50
Cast iron borings, chemical.....	10.00 to 10.50
Cast iron borings, rolling mill.....	8.00 to 8.50
Blast furnace borings and turnings .....	7.00 to 7.50
Forged scrap .....	8.00 to 8.50
Bundled skeleton, long.....	7.60 to 8.00
Forged flashings .....	8.00 to 8.50
Shafting .....	15.00 to 15.50
Street car axles .....	15.50 to 16.00
Rails for rerolling .....	11.00 to 11.50
Scrap rails .....	10.50 to 11.00

#### Warehouse Prices, f.o.b. Boston

	Base per Lb.
Soft steel bars and small shapes.....	3.265c.
Flats, hot-rolled .....	4.15c.
Reinforcing bars .....	3.265c. to 3.54c.
Iron bars—	
Refined .....	3.265c.
Best refined .....	4.60c.
Norway, rounds .....	6.60c.
Norway, squares and flats.....	7.10c.
Structural shapes—	
Angles and beams.....	3.365c.
Tees .....	3.365c.
Zees .....	3.465c.
Plates .....	3.365c.
Spring steel—	
Open-hearth .....	5.00c. to 10.00c.
Crucible .....	12.00c.
Tire steel .....	4.50c. to 4.75c.
Bands .....	4.015c. to 5.00c.
Hoop steel .....	5.50c. to 6.00c.
Cold rolled steel—	
Rounds and hexagons.....	4.05c.
Squares and flats.....	4.55c.
Toe calk steel.....	6.00c.

## Gain in Canadian Output of Pig Iron and Steel in 1926

TORONTO, ONT., Feb. 1.—The production of pig iron in Canada for the month of December amounted to 53,971 gross tons, a small gain over the 52,345 tons reported for November, but slightly below the 54,859 tons made in December, 1925. The total production of pig iron in Canada in 1926 was 737,503 gross tons, or 29 per cent over the 570,397 tons of 1925, and 24 per cent more than the 593,024 tons produced in 1924. In 1923, however, pig iron production reached 880,018 gross tons. During the year under review 461,028 gross tons, or 63 per cent of the total, was made for the further use of producing firms, and the remainder, 276,475 tons, was made for sale. Production for the year included 477,700 tons of basic iron, 218,155 tons of foundry iron and 41,648 tons of malleable iron.

During the month of December, 1926, the production of steel ingots and direct steel castings was 58,493 gross tons, or 8 per cent over the 54,311 tons for November. Production in December, 1925, amounted to 62,353 gross tons. For the entire year 1926 the production of steel ingots and castings totaled 776,888 gross tons, an increase of 3 per cent over the 752,695 gross tons for the year 1925.

## Increasing Steel Operations in the Valleys

YOUNGSTOWN, Feb. 1.—Production of iron and steel by Mahoning and Shenango Valley independents is exhibiting stronger tendencies, with the approach of spring. Strip mill departments are occupied at a high rate, while sheet mill production averages 75 per cent. Of the Valley independents, Sharon Steel Hoop Co. and Trumbull Steel Co. are operating close to normal. The Trumbull company started the week with schedules calling for 95 per cent activities.

The Republic Iron & Steel Co. has blown in the fourth stack in its group at Haselton, which includes five furnaces. Offsetting this gain, though, is the loss of the one active blast furnace in the Hubbard group of two stacks of the Youngstown Sheet & Tube Co. This furnace was suspended to permit repairs and improvements.

Under an arrangement with the Valley Mold & Iron Corporation, Sharpsville, Pa., which is building a new plant at Hubbard for the production of ingot molds and castings, the Youngstown Sheet & Tube Co. will supply hot metal for this property, and in return will purchase virtually all of its ingot mold requirements. It is in preparation for this change that the Hubbard stack was blown out. The Sheet & Tube company is planning to blow in at an early date one of its furnaces in its Brier Hill group at Youngstown.

Of 127 independent sheet mills in the Valley, 100 started the week, and 14 of 18 pipe mills are in action.

Sheet rollers are finding it less difficult to schedule their mills in advance, with a larger tonnage coming forward, influenced to a considerable degree by current low prices.

## Suspensions Cause Scrap to Decline at Detroit

DETROIT, Feb. 1.—With one or two of the largest consumers in the Ohio district holding up shipments of waste material and no sales of any tonnage being recorded, the market on old material has registered some declines during the past week. The fact that the automobile industry is feeling its way is evidenced in its releases on raw materials, and anticipated schedules for February are above those of the past month.

Heavy melting and shoveling steel .....	\$13.00 to \$13.50
Borings and short turnings.....	9.00 to 9.50
Long turnings .....	7.75 to 8.25
No. 1 machinery cast.....	17.00 to 18.00
Automobile cast .....	18.00 to 19.00
Hydraulic compressed .....	11.50 to 12.00
Stove plate .....	13.50 to 14.50
No. 1 busheling.....	11.00 to 11.50
Sheet clippings .....	8.25 to 8.75
Flashings .....	11.25 to 11.75



## FABRICATED STRUCTURAL STEEL

### Several Large Projects Swell Week's Awards to More Than 52,000 Tons

A Philadelphia office building taking 15,000 tons, a convention hall at Atlantic City, N. J., of 12,000 tons and a hospital in Los Angeles requiring 9000 tons, together with a number of other jobs of smaller size, make a total of more than 52,000 tons in the structural steel awards reported to THE IRON AGE in the week. Projects up for bidding, totaling about 40,000 tons, include a bridge over the Hudson River at Poughkeepsie, N. Y., calling for 10,000 tons. Awards follow:

ATLANTIC CITY, N. J., 12,000 tons, Convention Hall, to American Bridge Co.  
 JERSEY CITY, N. J., 4700 tons, New Jersey Highway Commission viaduct, contract No. 5, to Phoenix Bridge Co.  
 ENON, PA., 150 tons, plate girder work for Pennsylvania Railroad, to Bethlehem Steel Co.  
 LOS ANGELES, 3000 tons, addition to Museum of History, Science and Art, to McClintic-Marshall Co.  
 LOS ANGELES, 9000 tons, General Hospital, to Llewellyn Iron Works.  
 HILLBURN, N. Y., 130 tons, power plant addition, to New England Structural Co.  
 NEW YORK, 700 tons, loft building at Walker and Lafayette Streets, to Harris Structural Steel Co.  
 NEW YORK, 600 tons, nine-story apartment building, Seventy-fifth Street; office building, 19 East Fifty-third Street, and office building, Pearl Street, all to Easton Structural Steel Co.  
 NEWARK, N. J., 800 tons, building for Griffith Piano Co., to Hinkle Iron Co.  
 PHILADELPHIA, 15,000 tons, office building on Broad Street for the Fidelity-Philadelphia Trust Co., to American Bridge Co.  
 ATLANTIC CITY, N. J., 225 tons, apartment building, to American Bridge Co.  
 PITTSBURGH, 110 tons, steel windows for Jones & Laughlin mill building, to Truscon Steel Co.  
 MILWAUKEE, 230 tons, new Garfield Theater, to Lakeside Bridge & Structural Co.  
 CHICAGO, 3000 tons, cable building for Western Electric Co., to McClintic-Marshall Co.  
 WELLESBA, OKLA., 565 tons, power house, to the Mississippi Valley Structural Steel Co.  
 OAKLAND, CAL., 1050 tons, pipe line for the East Bay Water Co.; 750 tons to Western Pipe & Steel Co., and 300 tons to Montague Pipe & Steel Co., San Francisco.  
 SAN FRANCISCO, 150 tons, apartment building, California Street, to Central Iron Works, San Francisco.  
 SAN FRANCISCO, 120 tons, apartment building, Lombard Street, to Schrader Iron Works, San Francisco.  
 HONOLULU, 700 tons, two barges for the Inter-Island Navigation Co., to United States Steel Products Co., San Francisco.

### Structural Projects Pending

Inquiries for fabricated steel work include the following:

PHILADELPHIA, 450 tons, I Street bridge for city of Philadelphia.  
 PHILADELPHIA, 600 tons, office building for Provident Trust Co. at Seventeenth and Chestnut Streets.  
 HAGERSTOWN, MD., 500 tons, power house.  
 BELLOWS FALLS, VT., 400 tons, power house.  
 CAMBRIDGE, MASS., 314 tons, Central Square Trust Co. bank and office building.  
 NEW YORK, 1000 tons, office building at 247 Madison Avenue.  
 NEW YORK, 1500 tons, incinerating plant for city of New York, on East Seventy-third Street.  
 POUGHKEEPSIE, N. Y., 10,000 tons, bridge for State of New York across Hudson River.  
 PHILADELPHIA, 300 tons, Hospital for the Insane.  
 BALTIMORE, 500 tons, oil storage tanks for Standard Oil Co. of New Jersey.  
 FORT WAYNE, IND., 650 tons, theater and hotel.  
 GRANITE CITY, ILL., 800 tons, building for Commonwealth Steel Co.  
 DETROIT, 9000 tons, Union Trust Co. bank building.  
 CHICAGO, BURLINGTON & QUINCY, 650 tons, bridges.  
 CHICAGO, 700 tons, factory building for Mather Co.  
 CHICAGO, 3000 tons, Paschen office building.  
 CHICAGO, 280 tons, ball room; Levy & Kline, architects.  
 CHICAGO, 4400 tons, Woodlawn Theater; general contract awarded to Longacre Construction Co.  
 BATESVILLE, ARK., 750 tons, bridge.  
 CLARKDALE, ARIZ., 2500 tons, building for United Verde Copper Co.

SAND POINT, IDAHO, 1000 tons, bridge.  
 OAKLAND, CAL., 200 to 500 tons, pipe line for the East Bay Water Co.  
 SAN FRANCISCO, 800 to 1000 tons, Buck Creek project for the Feather River Power Co.; bids being received by R. C. Storice & Co.,  
 SAN FRANCISCO, 830 tons, plates for the Southern Pacific Co.; bids Feb. 10.  
 SAN FRANCISCO, 350 tons, arena.  
 PORTLAND, ORE., 100 tons, fabricated material for the Bull Run storage dam; bids Feb. 9.  
 PORTLAND, 1000 tons, theater; Rapp & Rapp, architects.

## REINFORCING STEEL

### Awards of About 3200 Tons—Pending Projects Show Increase, Total Being 5700 Tons

Inquiries for concrete reinforcing steel are running slightly heavier than at the opening of the year. The total for the week, as reported to THE IRON AGE, is about 5700 tons, this including 1000 tons for a Knights of Columbus building in Chicago. Awards were about 3200 tons, of which 1035 tons was for Panama Canal work. Awards follow:

CHICAGO, 250 tons of rail steel, Florists Exchange Building, to Inland Steel Co.  
 CHICAGO, 150 tons of rail steel, apartment building at 11 West Division Street, to Olney J. Dean & Co.  
 BROOKLYN, 300 tons, building for Brooklyn Union Gas Co., William F. Kenny Co., general contractor, to McClintic-Marshall Co.  
 BROOKLYN, 700 tons, building for Greater Industrial Corporation, to Fireproof Products Co.  
 CRISTOBAL, PANAMA, 1035 tons rail steel bars, work on Panama Canal, to Laclede Steel Co.

### Reinforcing Bars Pending

Inquiries for reinforcing steel bars include the following:

CAMBRIDGE, MASS., 120 tons, bank and office building for Central Square Trust Co.  
 FORT WAYNE, IND., 220 tons, Fox Theater.  
 CHICAGO, 275 tons, garage at 1019 North Clark Street; Thorgerson & Erickson, contractors.  
 CHICAGO, 1000 tons, club house for Calumet Council of Knights of Columbus; Hall, Lawrence, Rippel & Radcliff, architects.  
 SACRAMENTO, CAL., 165 tons, administration building for the County Hospital; W. C. Keating, low bidder on general contract.  
 PORTLAND, ORE., 150 tons, for the Bull Run storage dam; bids Feb. 9.  
 NEW YORK, 430 tons, warehouse for Morgan Brothers; White Construction Co., general contractor.  
 BROOKLYN, 230 tons, destructor plant, Department of Street Cleaning; general contract not let.  
 ALBANY, N. Y., 800 tons, State office building; reported last week with tonnage estimated.  
 PHILADELPHIA, 600 tons, public school at Cottman and Loretta Streets.  
 BALTIMORE, 200 tons, warehouse for Croes & Blackwell.

## Metal Trades Meeting in Los Angeles

The Metal Trades Manufacturers' Association of Southern California held its annual meeting in the banquet room of the Chamber of Commerce, Los Angeles, Jan. 25, and named as officers for the current year: A. R. Adamson, Hercules Foundries, president; C. H. Shattuck, C. F. Braun Corporation, first vice-president; A. C. Denman, California Malleable Castings Co., second vice-president; George A. Millard, Mills Iron Works, treasurer. Carroll A. Stilson was renamed as secretary-manager. Present at the meeting were 155 representatives of members of the association and guests. Fred K. Czerniski, Magnus Brass Foundry, has been president for the past two years. Members of the executive committee named include D. F. Axelsson, Axelson Machine Works, chairman; Frank E. Burger, Llewellyn Iron Works and Martin Madsen, Madsen Iron Works.

Speakers included William H. Jackson, chairman of the standardization committee of the Southern California Purchasing Agents' Association, who told of "Standardization in Industry."

## NON-FERROUS METAL MARKETS

The Week's Prices		Feb. 1	Jan. 31	Jan. 29	Jan. 28	Jan. 27	Jan. 26
	Lake copper, New York....	13.25	13.25	13.37½	13.37½	13.37½	13.37½
	Electrolytic copper, N. Y.*..	12.87½	12.87½	12.90	12.90	12.90	13.00
	Straits tin, spot, New York.	66.50	65.50	....	64.75	65.12½	65.37½
	Lead, New York.....	7.40	7.40	7.40	7.40	7.40	7.40
	Lead, St. Louis.....	7.20	7.20	7.22½	7.22½	7.22½	7.22½
	Zinc, New York.....	6.92½	6.87½	6.85	6.85	6.82½	6.85
	Zinc, St. Louis.....	6.57½	6.52½	6.50	6.50	6.47½	6.50

Cents per Pound  
for  
Early Delivery

\*Refinery quotation; delivered price ¼c. higher.

NEW YORK, Feb. 1.—The most active market in the past week was tin, with sales very heavy. The copper, lead and zinc markets were quiet, with prices in the first two declining. Conditions in zinc have favored slight advances.

**Copper.**—Another very quiet week with the price tendency downward has been experienced in the electrolytic copper market. Consumers, having covered their immediate needs, show no interest, and the market has been sagging, partly from its own weight and partly from concessions made by some sellers. Electrolytic copper is available today at 13.12½c., delivered in the Connecticut Valley, with the possibility that this might be shaded. Copper Exporters, Inc., reduced its quotations last week 1/8c. to 13.50c., c.i.f. Hamburg. While the reduction stimulated foreign demand to some extent, buying has not been heavy. Lake copper is quoted at 13.25c., delivered.

**Copper Averages.**—The average price of Lake copper for the month of January, based on daily quotations in THE IRON AGE, was 13.37c., delivered. The average price of electrolytic copper was 12.99c., refinery, or 13.24c., delivered in the Connecticut Valley.

**Tin.**—One of the most active periods in the history of the local tin market was experienced last week—total sales approximated 3000 tons. With quotations declining almost each day up to Saturday, Jan. 29, consumers became actively interested and bought heavily for February, March and April. Dealers also took considerable metal for May and June. March and April deliveries were the most actively bought. Selling was

general with some sellers more eager than others. There was a steady decline in London each day, which helped the market here. An appreciation of the statistical position at the end of the month brought this activity to a close. The January deliveries into consumption of 6295 tons were less than the estimates of 6500 to 6900 tons, and the 3304 tons in stock and landing on Jan. 31 was the largest in a long time. The Straits shipments of 6132 tons were also larger than the estimates, and the decrease in the world's visible supply, as estimated at anywhere from 811 to 984 tons, was less than expected. The cumulative effect of these data was a steadying influence and strength developed with prices stiffening at once. Another factor was a statement that February shipments of Straits tin would not exceed 4500 tons. Spot Straits tin today, after falling below 65c. last week, contrasted with 72.50c. as the high for 1926, was nominal at 66.50c., New York. London quotations today showed a sharp advance over those of yesterday with yesterday's higher than the previous ones, spot standard being quoted at £295 15s., future standard at £290, and spot Straits at £304 5s. The Singapore price today was £297 15s. Dealers were largely the buyers of the 200 tons sold yesterday, Monday.

**Lead.**—Late in the day on Jan. 25, the American Smelting & Refining Co. reduced its contract quotation from 7.50c. to 7.40c., New York. Each day since then the market has been largely influenced by the trend in London and buying has been only moderate. With the decline in the quotation of the leading interest, the outside market in the West fell to 7.22½c., St. Louis, and today is a little lower at 7.20c.

**Zinc.**—Prices of prime Western zinc are higher, due less to buying than to the firm attitude of producers

### Metals from New York Warehouse

#### Delivered Prices per Lb.

Tin, Straits pig.....	66.50c. to 67.50c.
Tin, bar.....	63.50c. to 69.50c.
Copper, Lake.....	14.50c.
Copper, electrolytic.....	14.25c.
Copper, casting.....	13.75c.
Zinc, slab.....	7.25c. to 7.75c.
Lead, American pig.....	8.25c. to 8.75c.
Lead, bar.....	10.75c. to 11.25c.
Antimony, Asiatic.....	16.00c. to 16.50c.
Aluminum, No. 1 ingot for remelting (guaranteed over 99 per cent pure).....	23.00c. to 30.00c.
Babbitt metal, commercial grade.....	30.00c. to 40.00c.
Solder, ½ and ⅓.....	43.00c. to 44.00c.

### Metals from Cleveland Warehouse

#### Delivered Prices per Lb.

Tin, Straits pig.....	70.25c.
Tin, bar.....	72.25c.
Copper, Lake.....	14.25c.
Copper, electrolytic.....	14.25c.
Copper, casting.....	13.25c.
Zinc, slab.....	8.25c.
Lead, American pig.....	8.25c.
Antimony, Asiatic.....	17.50c.
Lead, bar.....	10.00c.
Babbitt metal, medium grade.....	20.75c.
Babbitt metal, high grade.....	24.25c.
Solder, ½ and ⅓.....	42.25c.

### Rolled Metals from New York or Cleveland Warehouse

#### Delivered Prices, Base per Lb.

<b>Sheets—</b>	
High brass.....	18.12½c. to 19.12½c.
Copper, hot rolled.....	21.75c. to 22.75c.
Copper, cold rolled, 14 oz. and heavier.....	24.00c. to 25.00c.
<b>Seamless Tubes—</b>	
Brass.....	23.00c. to 24.00c.
Copper.....	23.75c. to 24.75c.
Brazed Brass Tubes.....	26.62½c. to 27.62½c.
Brass Rods.....	15.87½c. to 16.87½c.

#### From New York Warehouse

#### Delivered Prices, Base per Lb.

Zinc sheets (No. 9) casks.....	12.75c. to 13.00c.
Zinc sheets, open.....	13.25c. to 13.50c.

### Non-Ferrous Rolled Products

Mill prices on bronze, brass and copper products and on zinc sheets have not changed since Jan. 5 and 10 respectively. Lead full sheets were reduced ½c. on Jan. 24 and are now quoted at 11c. to 11.25c. Aluminum sheets have also been reduced recently, now being 2c. below the schedule which was effective during the last several months, while aluminum tubes have dropped 3c.

#### List Prices Per Lb., f.o.b. Mill

On Copper and Brass Products, Freight up to  
75c. per 100 Lb. Allowed on Shipments  
of 500 Lb. or Over

<b>Sheets—</b>	
High brass.....	18.12½c.
Copper, hot rolled.....	21.75c.
Zinc.....	11.00c.
Lead (full sheets).....	11.00c. to 11.25c.
<b>Seamless Tubes—</b>	
High brass.....	23.00c.
Copper.....	23.75c.
<b>Rods—</b>	
High brass.....	15.87½c.
Naval brass.....	18.62½c.
<b>Wire—</b>	
Copper.....	15.12½c.
High brass.....	18.62½c.
Copper in Rolls.....	20.62½c.
Brazed Brass Tubing.....	26.12½c.

#### Aluminum Products in Ten Lots

The carload freight rate is allowed to destinations east of the Mississippi River and also allowed to St. Louis on shipments to destinations west of that river.

Sheets, 0 to 10 gage, 3 to 30 in. wide.....	35.50c.
Tubes, base.....	45.00c.
Machine rods.....	34.00c.



**Rolled Metals, f.o.b. Chicago Warehouse**

(Prices Cover Trucking to Customers' Doors in City Limits)

Sheets—	Base per Lb.
High brass .....	18½c.
Copper, hot rolled .....	21.75c.
Copper, cold rolled, 14 oz. and heavier .....	24.00c.
Zinc .....	12.00c.
Lead, wide .....	11.25c.
Seamless Tubes—	
Brass .....	23.00c.
Copper .....	23.75c.
Brazed Brass Tubes .....	26¼c.
Brass Rods .....	15½c.

who are disinclined to sell, especially for far futures. The market is therefore firm but inactive. There were bids today for 100 to 200-ton lots at 6.55c., St. Louis, and sales of carload and small lots at 6.57½c. to 6.60c., St. Louis. Ore prices were fairly firm at \$42 a ton, with signs of a scarcity. Prime Western zinc for early or February delivery is quoted at 6.57½c. to 6.60c., St. Louis, or 6.92½c. to 6.95c., New York.

**Antimony.**—With conditions in China still unfavorable, Chinese metal is quoted today for spot delivery at 14.50c. to 15c., New York, duty paid, with futures at 14.25c.

**Nickel.**—Wholesale lots of ingot nickel are quoted at 35c. with shot nickel at 36c. and electrolytic nickel at 39c. per lb.

**Aluminum.**—Virgin metal, 98 to 99 per cent pure, is quoted at 26c. to 27c. per lb., delivered.

**Non-Ferrous Metals in Chicago**

**FEB. 1.**—Prices of tin and lead are lower as a result of supplies being in excess of the demand. Sales of old metals are unusually small and prices are weaker.

We quote in carload lots: Lake copper, 13.50c.; tin, 66.50c.; lead, 7.30c.; zinc, 6.65c.; in less than carload lots, antimony, 16c. On old metals we quote copper wire, crucible shapes and copper clips, 10.50c.; copper bottoms, 9.25c.; red brass, 9.25c.; yellow brass, 7.25c.; lead pipe, 6.25c.; zinc, 4.25c.; pewter, No. 1, 35c.; tin foil, 43.50c.; block tin, 52c.; aluminum, 15c.; all being dealers' prices for less than carload lots.

**RAILROAD EQUIPMENT****Freight Car Orders Total 900 and 1305 Are Being Inquired For—40 Locomotives Bought**

The week's railroad equipment business included orders for 900 freight cars, 40 locomotives and fair-sized lots of passenger equipment. There are inquiries in the market for 1305 freight cars and 12 locomotives, in addition to those previously reported. Details of the week's business follow:

The Southern Pacific is in the market for 1000 gondola cars.

The Oliver Iron Mining Co. is asking for prices on 10 8-wheel switching locomotives.

The Youngstown & Northern is in the market for 2 6-wheel switching engines.

The Missouri Pacific has ordered 26 steel passenger, baggage and chair cars from the American Car & Foundry Co., the same number from the Pullman Car & Mfg. Corporation and 18 from the St. Louis Car Co. This road has also ordered 25 8-wheel switching, 6 Pacific type and 5 Mountain type locomotives from the American Locomotive Co.

The Union Refrigerator Transit Co. has ordered 500 refrigerator cars from the American Car & Foundry Co., in addition to 500 recently ordered.

The Atchison, Topeka & Santa Fe has decided to build 150 sulphur cars in its own shops.

The North American Car Co. has ordered 200 poultry cars from the Illinois Car & Mfg. Co.

The Tidewater Oil Co. has ordered 200 tank cars from the American Car & Foundry Co.

The Norfolk & Western is in the market for 50 30-yd. air-dump cars.

The Northern Pacific is inquiring for 200 ballast cars.

The Oliver Iron & Mining Co. has sent out an inquiry for 55 30-yd. air-dump cars.

**Old Metals, Per Pound, New York**

The buying prices represent what large dealers are paying for miscellaneous lots from the smaller accumulators, and the selling prices are those charged consumers after the metal has been properly prepared for their uses.

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, heavy crucible .....	10.75c.	12.50c.
Copper, heavy and wire .....	10.75c.	11.75c.
Copper, light and bottoms .....	8.75c.	10.25c.
Brass, heavy .....	6.50c.	8.00c.
Brass, light .....	5.75c.	7.25c.
Heavy machine composition .....	8.25c.	9.75c.
No. 1 yellow brass turnings .....	7.75c.	8.50c.
No. 1 red brass or composition turnings .....	7.75c.	8.75c.
Lead, heavy .....	6.25c.	6.75c.
Lead, tea .....	4.25c.	5.00c.
Zinc .....	3.75c.	4.25c.
Sheet aluminum .....	15.00c.	17.00c.
Cast aluminum .....	15.00c.	17.00c.

The Chicago, South Shore & South Bend has purchased 20 passenger cars from the Pullman Car & Mfg. Corporation.

The Santa Fe has ordered 10 baggage cars from the Pullman Car & Mfg. Corporation.

The Chicago, Aurora & Elgin has placed 15 motor-equipped passenger cars with the Cincinnati Car Co.

The New Orleans Great Northern Railroad Co. has ordered 3 Mountain type locomotives from the American Locomotive Co.

The New England Fuel & Transportation Co. has ordered 1 8-wheel switching locomotive from the American Locomotive Co.

**Chicago Iron and Steel Market**

(Concluded from page 385)

sylvania is advertising a 40,000-ton, and the St. Paul a 7000-ton, list.

We quote delivered in consumers' yards, Chicago and vicinity, all freight and transfer charges paid for all items, except relaying rails, including angle bars to match, which are quoted f.o.b. dealers' yards:

Per Gross Ton	
Heavy melting steel .....	\$13.25 to \$13.75
Frogs, switches and guards, cut apart, and miscellaneous rails .....	15.00 to 15.50
Shoveling steel .....	13.25 to 13.75
Hydraulic compressed sheets .....	11.75 to 12.25
Drop forge flashings .....	9.50 to 10.00
Forged cast and rolled steel car wheels .....	17.25 to 17.75
Railroad tires, charging box size .....	17.25 to 17.75
Railroad leaf springs, cut apart .....	17.00 to 17.50
Steel couplers and knuckles .....	16.50 to 17.00
Coil springs .....	17.50 to 18.00
Low phosphorus punchings .....	15.50 to 16.00
Axle turnings, foundry grade .....	14.00 to 14.50
Axle turnings, blast fur. grade .....	11.00 to 11.50
Relaying rails, 56 to 60 lb. .....	25.50 to 26.50
Relaying rails, 65 lb. and heavier .....	26.00 to 31.00
Rerolling rails .....	16.50 to 17.00
Steel rails, less than 3 ft. .....	17.25 to 17.75
Iron rails .....	13.50 to 14.00
Cast iron borings .....	10.50 to 11.00
Short shoveling turnings .....	10.50 to 11.00
Machine shop turnings .....	7.25 to 7.75
Railroad malleable .....	16.25 to 16.75
Agricultural malleable .....	15.00 to 15.50
Angle bars, steel .....	16.00 to 16.50
Cast iron car wheels .....	15.50 to 16.00

Per Net Ton	
No. 1 machinery cast .....	16.50 to 17.00
No. 1 railroad cast .....	16.00 to 16.50
No. 1 agricultural cast .....	15.50 to 16.00
Stove plate .....	14.50 to 15.00
Grate bars .....	14.00 to 14.50
Brake shoes .....	13.00 to 13.50
Iron angle and splice bars .....	14.00 to 14.50
Iron arch bars and transoms .....	19.00 to 19.50
Iron car axles .....	22.50 to 23.00
Steel car axles .....	17.50 to 18.00
No. 1 railroad wrought .....	12.75 to 13.25
No. 2 railroad wrought .....	12.00 to 12.50
No. 1 busheling .....	10.50 to 11.00
No. 2 busheling .....	7.25 to 7.75
Locomotive tires, smooth .....	16.50 to 17.00
Pipes and flues .....	9.00 to 9.50

**Wire Products.**—The spring trade is now getting under way, and the market is showing greater strength than a week ago. Contracting by the manufacturing trade is a trifle more active, and specifications at the close of January show substantial improvement over the first of the month. There is no evidence that stocks, either at mills or in the hands of users, are accumulating, and production at the rate of 55 to 60 per cent of capacity is ample to take care of the current demand. Mill prices are shown on page 381.

## PERSONAL

Edward B. Busby, recently secretary-treasurer of the Monroe Steel Castings Co., Monroe, Mich., and for a number of years secretary-treasurer of the Rowland Spring Co., Philadelphia, has been placed in charge of the newly organized industrial department of Benjamin Dansard & Co., Detroit, investment bankers. He will become a partner in the firm.

L. Weimer Murray, Chicago district sales manager for the General Refractories Co., Philadelphia, has returned from an extended trip in Cuba and the West Indies.

Frank W. Steere, formerly associated with the Steere Engineering Co., Detroit, has been appointed vice-president of the Semet-Solvay Engineering Corporation, 40 Rector Street, New York, recently formed to carry on the engineering and construction work of the Semet-Solvay Co. and the Steere Engineering Co.

W. R. Bassick, formerly vice-president of the Bassick Co., has been made chairman of the Relay Motors Corporation, Wabash, Ind., an organization formed recently to take over the assets of the Commerce Motor Truck Co., Ypsilanti, Mich., and Service Motors, Inc., Wabash, Ind. G. L. Gillam, formerly president of Relay Motors, Inc., is president of the new corporation, and its policies will be outlined by E. W. Bassick, formerly associated with the motor truck company, who was largely responsible for the amalgamation. M. A. Holmes, vice-president in charge of sales for the new company, was director of sales for the motor truck company, and previously was vice-president and sales manager of the Republic Motor Truck Co., Detroit. A. K. Taber, formerly treasurer of Service Motors, Inc., is secretary and treasurer of the new company.

George B. Darby, Jr., who has been secretary-treasurer and sales manager for the Lansdale Foundry Co., Inc., Lansdale, Pa., has been made a commercial research engineer for the Cast Iron Pipe Association with headquarters at Birmingham.

O. L. Harrison has been appointed general sales manager of the Delco-Remy Corporation, a subsidiary of General Motors Corporation, and will make his headquarters at Anderson, Ind. He was formerly general manager of the Dayton Engineering Laboratories Co., Dayton, Ohio, another General Motors unit. He succeeds George Stone who has taken a year's leave of absence because of illness.

Albert G. Wessling has been reelected president of the Wessling Brothers Foundry Co., Cincinnati. Other officers named for the coming year are George W. Piehl, vice-president; Robert L. Kruse, treasurer, and Henry J. Weber, secretary.

William H. Pouch, president Concrete Steel Co., New York, and president of the National Association of Credit Men, who is at present touring the Pacific Coast by automobile, addressed a gathering of Far Western credit managers at the Palace Hotel, San Francisco, on Jan. 25. He also conferred with Mayor



EDWARD B. BUSBY

Rolph and members of the San Francisco City Planning Commission regarding civic improvements.

Walter E. Harris of the sales department of the Stephens-Adamson Mfg. Co., Aurora, Ill., manufacturer of transmission and conveying machinery, has recently been made manager of the southeastern district with headquarters in the Martin Building, Birmingham.

J. G. Anderson, formerly superintendent of the Rockford Lathe & Drill Co., Rockford, Ill., has been made superintendent of the Rockford Machine Tool Co.

C. W. Greenfield has been appointed trustee in bankruptcy in the case of H. E. Pridmore, Inc., Chicago, manufacturer of molding machines.

A. S. Anderson has been made manager in receivership of the Berryhill Malleable Iron Co., Evansville, Ind. He was recently connected with the Standard Wheel Works and the Terre Haute Malleable Iron Co., Terre Haute, Ind.

Lucius Rossiter has been made president of the Terry Steam Turbine Co., Hartford, Conn., to succeed the late Douglas H. Thomson. Previously Mr. Rossiter was vice-president and treasurer. He became associated with the company in 1913 as assistant sales manager.

Thomas Ferry, president Ferry Cap & Set Screw Co.; F. R. Fishback, president Electric Controller & Mfg. Co.; Robert W. Kallenbach, president McMyler-Interstate Co., and George J. Stanley, vice-president United States Aluminum Co., have been elected directors of the American Plan Association of Cleveland.

Francis S. Carr, formerly vice-president of the Pennsylvania Steel Export Co., Philadelphia, has been appointed district sales agent in Pennsylvania, Maryland, Delaware and southern New Jersey for the Bayonne Bolt Corporation, Bayonne, N. J., and will have offices at 1207 Widener Building, Philadelphia. He was formerly connected for some time with the Philadelphia district office of the Carnegie Steel Co. John J. Deasy, recently associated at Philadelphia with the Hoopes & Townsend Corporation, will assist Mr. Carr.

R. A. Foster, vice-president of the L. B. Foster Co., Pittsburgh, has been placed in charge of that company's office recently opened at 1764 Illinois Merchants Bank Building, Chicago.

C. M. White, recently superintendent of the Monongahela Connecting Railroad and the Aliquippa & Southern Railway, has been placed in charge of the tin plate, wire and pipe departments at the Aliquippa works, Jones & Laughlin Steel Corporation, with the title of assistant general superintendent. Grenville Lewis has also been named assistant general superintendent at the plant and both men will work under the direction of F. E. Fieger, general superintendent at Aliquippa.

C. E. Leshner, for the past three years assistant to the president, has been elected to the newly created position of executive vice-president of the Pittsburgh Coal Co. In the new position he will direct planning and statistics, purchases, real estate, research, advertising and publicity. Before joining the company he was editor of *Coal Age*, and prior to that was in charge of the coal and coke work of the mineral resource division of the United States Geological Survey in Washington. During the war he was director of the bureau of statistics of the United States fuel administration on the staff of Dr. Harry A. Garfield. He is a graduate of the Colorado School of Mines and began his mining career in British Columbia.

H. C. Woodsum, recently in charge of advertising and sales promotion for the Boston Gear Works, Inc., Norfolk Downs, Mass., has been made assistant to the manager of the company.



F. C. Turner, 116 Broad Street, New York, has been appointed export representative for the Gananoque Spring & Axle Co., Gananoque, Ont.

Bohumil A. Zikmund, production manager and assistant secretary of the Sivyver Steel Casting Co., Milwaukee, has been made treasurer of the company. He has been connected with the organization in various capacities since 1912. Martin A. Fladoes, assistant sales manager for the same company, has been promoted to sales manager. He has been in the Sivyver sales engineering department for five years.

Francis R. Harris is president of the National-Harris Wire Co., 113 Orchard Street, Newark, N. J., recently formed by a consolidation of Harris Alloys, Inc., the National Alloyed Metals Co. and the Murray-Harris Wire Co., all of Newark. Francis A. Harris and Frederick T. Harris are vice-presidents of the new company. Albert E. Harris is secretary and Joseph W. O'Loughlin treasurer.

Walter E. Rahm, formerly chief engineer for the Burroughs Co., Newark, N. J., has been made sales manager for the Watson-Stillman Co., New York.

Earnest V. Shaw, who was made works manager of the Artistic Bronze Co., Bridgeport, Conn., a few months ago, has been elected secretary and a director of the company.

George D. Babcock and R. Carl Hicks, of Dodge

Brothers, Inc., Detroit, left Jan. 29 for a two to three months' trip in France, Germany, Czechoslovakia and Poland.

C. H. Murphey, assistant manager of sales, steel division, Colorado Fuel & Iron Co., Denver, has been appointed assistant to the executive vice-president of the company.

W. C. Holzworth, acting manager for H. W. Grant, receiver of the Struthers Furnace Co., Youngstown, sailed for Europe this week, where he will remain until May.

Howard B. Waha, until recently chief engineer of the United Alloy Steel Corporation, Canton, Ohio, has been placed in charge of the office recently opened at 508 Leader News Building, Cleveland, by F. H. Crawford & Co., Inc., 50 Church Street, New York.

Arthur A. Fowler, president Rogers Brown & Crocker Brothers, Inc., New York, dealers in pig iron, coke and ferroalloys, has been elected a director of the Corn Exchange Bank, New York.

J. W. Harrison has been elected vice-president of the J. M. and L. A. Osborne Co., Cleveland sheet steel jobber, succeeding E. J. Strong who resigned because of ill-health. John A. Decker, formerly assistant sales manager, has succeeded Mr. Harrison as sales manager. D. A. Hoffer was elected a director.

## The Steel Club of Philadelphia

THE Steel Club of Philadelphia, composed of men engaged in the selling of various steel products, probably is the only social organization in the steel business, aside from plant societies. It holds an annual dinner, which is attended by men from all sections of the East, and its annual golf tournaments have also attracted widespread interest. At a recent monthly luncheon at a Philadelphia restaurant the club had its first photograph taken, with only a few members missing. The names are given as follows:

Those seated, from left to right: W. S. Stephenson, American Rolling Mill Co.; William L. Hoffman, mill representative; Paul M. King, Worth Steel Co., Claymont, Del.; John B. De

Wolfe, Trumbull Steel Co.; Frank W. Jones, Eastern Steel Co.; Frank J. Krouse, Bethlehem Steel Co.; H. B. Gaylord, Carpenter Steel Co.; L. R. Stewart, Bethlehem Steel Co.; W. B. Kennedy, Bethlehem Steel Co.; L. M. Schrufer, Lorain Steel Co.; T. W. Simpers, American Sheet & Tin Plate Co.; LeRoy Richards, Alan Wood Iron & Steel Co.; Samuel H. Baker, Sharon Steel Hoop Co.; W. W. Deal, American Steel & Wire Co.; William H. Dickson, Alan Wood Iron & Steel Co.

Those standing, left to right: W. S. Bitting, National Tube Co.; W. S. Lippincott, Bethlehem Steel Co.; C. S. McKinley, Republic Iron & Steel Co.; Brewster Jackson, Wickwire-Spencer Steel Co.; S. J. Cotsworth, Lorain Steel

Co.; C. O. Hadly, Alan Wood Iron & Steel Co.; W. S. Haring, Alan Wood Iron & Steel Co.; W. O. Lange, Phoenix Iron Co.; R. H. McCracken, Central Iron & Steel Co.; H. E. Richardson, Youngstown Sheet & Tube Co.; Thomas C. Ham, Jones & Laughlin Steel Corporation; George H. Webb, Central Alloy Steel Co.

Other members who were not in attendance when the photograph was taken are: H. G. Uphouse and J. K. Baylis, Donner Steel Co.; Samuel Broome, Pittsburgh Crucible Steel Co.; Stuart Hazlewood, Midvale Co.; John E. Wetzel, Superior Steel Corporation; George F. Wilson, Ludlum Steel Co.; G. M. Hoover, American Rolling Mill Co.



## OBITUARY

JOHN W. MANN, service engineer of the Chicago Crucible Co., Chicago, died early in January at his home in Antioch, Ill., aged 65 years. He was born in Warren County, Pa., and began foundry work early in life as a molders' apprentice. He was engaged in business for himself for a number of years, but in 1917 became associated with the Chicago Crucible Co., retaining that connection until the time of his death.

DE COURSEY CLEVELAND, president of the Medina Iron & Brass Co., Medina, N. Y., died last week at the Medina Memorial Hospital in that city. He was born at Short Hills, N. J., in 1876, and had been associated with the Medina company since 1919.

JOSEPH C. ROBINSON, president of the Central Specialty Co., Detroit, and vice-president of the Ypsilanti Foundry Co., Ypsilanti, Mich., died Jan. 22 at his home in Detroit. He was 63 years of age and first engaged in the foundry and machine shop business 12 years ago.

COL. HENRY G. PROUT, for 16 years editor of *Railroad Gazette*, now *Railway Age*, and later for 12 years vice-president and general manager of the Union Switch & Signal Co., Swissvale, Pa., died Jan. 26 at his home in Nutley, N. J. He was born in Virginia in 1845. He saw service in the Union Army during the Civil War, and later was graduated in civil engineering from the University of Michigan. After engaging in government survey work in the West he was sent to Egypt as a major of engineers, and served for some time as governor general of the Provinces of the Equator, being the only American to have enjoyed this distinction in Africa. Following his association with the Westinghouse interests he retired from active business, and had lived in retirement at Summit, N. J., for the last ten years.

HAWLEY A. NEWKIRK, a pioneer brass manufacturer in the Middle West, died Jan. 20 at St. Luke's Hospital, Chicago, aged 74 years. For a number of years he was an official of the Mississippi Brass Wire Co., Chicago.

### Heavier Industrial Use of Coal

December industrial consumption of coal was 45,085,000 tons, according to the National Association of Purchasing Agents, New York. This is 6 per cent above the November total of 42,324,000 tons. There has been a steady increase every month since last summer.

Conservative stocking is taking place in most branches of industry. The survey shows 55,010,000 tons on hand as of Jan. 1, an average supply of 37 days in all industries. In December, 58,548,000 tons of bituminous coal were mined, and 7,556,000 tons of anthracite, a combined total of 66,104,000 tons.

### Will Liquidate Low Moor Iron Co.

The Low Moor Iron Co., 14 Wall Street, New York, is to be liquidated by the directors, and the company's three blast furnaces, two at Low Moor and one at Covington, Va., together with ore properties in that locality are being offered for sale. The company was organized in 1873, and was active during the war period when a battery of 100 beehive coke ovens was installed at Low Moor. One of the stacks there remained active until January, 1925, and the 10,000 to 15,000 tons of iron still left on the stock pile is being marketed gradually. Dismantling of these stacks will leave 14 furnaces in Virginia, only two of which are active.

### Winchell Library Given to the United Engineering Societies

The memorial gift of the library of the late Horace Vaughn Winchell to the United Engineering Societies Library, that has been offered by Mrs. Winchell and the Anaconda Mining Co. through the Institute of Mining and Metallurgical Engineers, was accepted for that purpose with great pleasure by the board of directors of the institute at their meeting on Jan. 28. Dr. H. Foster Bain, secretary of the institute, in informing the Anaconda company of the action taken and the sentiments of the board on learning of the gift, expressed "special delight that this important collection of books is to be kept together and made generally useful for all time through the generosity of the company on whose staff Winchell so long served. It seems a fine tribute by a corporation to the good work done by an engineer, and as such the institute will value the act and the gift especially."

This special collection of 10,000 books is the accumulated working tools of three leaders in American science and technology. It includes the books covering early American geology, collected by Mr. Winchell's uncle and father, and his own extensive collections dealing especially with ore deposits, mining law, and the history of geology.

### Trumbull Steel Co. Shows Stronger Financial Position

Net profits for 1926 of the Trumbull Steel Co., Warren, Ohio, after depreciation and interest charges, totaled \$2,263,964, equivalent to \$22.64 a share on the outstanding preferred stock of the company and \$2.72 per common share. During the year the company spent \$2,450,306 for repair, maintenance and renewal of its plants and \$939,297 for extensions and additions. The annual report which was presented to the stockholders at the annual meeting Feb. 1 also showed that the Liberty Steel Co., Warren, the capital stock of which is owned by the Trumbull organization, earned \$9.68 per share of its common stock after allowance for preferred dividends, or \$162,653.

### Improvements Planned for Campbell Works

The Youngstown Sheet & Tube Co. will start its blast furnace boiler plant at the Campbell works, to take care of excess blast furnace gas not now used for fuel purposes. New boilers and allied equipment will be installed, the cost to range from \$3,000,000 to \$3,500,000.

In conjunction with the boiler installations, blast furnace A in the company's Campbell group, will be rebuilt and modernized.

Owing to a recent change in plans, the company will not erect at this time its proposed by-product coke plant to serve the South Chicago furnaces, which it was estimated would cost \$5,000,000 and was scheduled for this spring.

### Trumbull Steel Co. Officers Reelected

YOUNGSTOWN, Feb. 1.—W. H. Foster, president of the General Fireproofing Co., Youngstown, was elected a director of the Trumbull Steel Co., Warren, Ohio, today, in place of W. H. B. Ward, of Warren, former vice-president and general manager. John T. Harrington continues as president, C. S. Eaton, Cleveland, as chairman of the board and Philip Wick, Youngstown, as vice-president. The other officers and directors of the company were also reelected.

The lake boat L. E. Block, which is being built for the Inland Steamship Co., was launched at the Lorain yards of the American Shipbuilding Co. Feb. 1. The boat was named in honor of the chairman of the board of the Inland Steel Co.



# Cartel Unsatisfactory to Germany

Excess Output Fines Total \$2,700,000—Welsh Tin Plate Mills  
Revive Sales Agreement—Russia Curtails Electric Projects

(By Cable)

LONDON, ENGLAND, Jan. 31.

THE pig iron market is quiet. As a result of the shortage of supplies, Dorman, Long & Co. are preparing to blow in an additional furnace at the Clarence Works, making a total of 45 Cleveland stacks active. There is some export demand for hematite, but sales are rather restricted. Foreign ore is quiet.

Finished steel demand continues moderate, but makers of heavy specifications are well booked and consumers are not keen buyers for forward delivery, as lower prices are anticipated. Meanwhile quotations are firm.

Welsh tin plate makers are reviving the former pooling agreement, to be effective Mar. 28. Various meetings have been held and the question of restoring the minimum price plan has been discussed, but no

definite steps are likely before March. The tin plate market is slightly firmer with forward delivery quoted at 20s. to 20s. 3d. (\$4.85 to \$4.91) per base box and prompt shipment at 20s. 3d. to 20s. 6d. (\$4.91 to \$4.97) per base box, all f.o.b. works port. Sales, however, are restricted.

Galvanized sheets are weak as a result of the lack of substantial buying. Black sheets of No. 24 gage are in moderate demand and there is a small business in Japanese specifications. Otherwise the light gages are quiet.

Continental markets are disorganized by the poor demand and prices have receded further, with works seeking orders.

Germany is reported to be dissatisfied with the operation of the International Raw Steel Cartel. The German raw steel output last year was 12,341,636 tons.

## German Export Bounties Higher—Fines of \$2,700,000 Owed to Cartel

(By Radio)

BERLIN, GERMANY, Jan. 31.

THE domestic market continues firm but international prices are weaker. As a result of the increasing disparity between home and international prices the steel syndicate has increased the bounties to exporting manufacturers on ingots by 10m. per ton, blooms 8m. and bars 10m. Other products show corresponding increases. In January the difference between domestic and "world market" prices was 5m. per ton on ingots, 7m. on blooms and 23m. on bars.

Domestic prices and selling conditions continue unchanged.

While the steel syndicate retains for February its restriction of output to 80 per cent of capacity, leading producers are operating at full capacity. Steel ingot output in 1926 was 12,341,636 metric tons with rolled products at 10,276,082 tons, both slightly more than in 1925.

Leading steel men are dissatisfied with the International Raw Steel Cartel, claiming that Germany's quota is inadequate. For producing in excess of the quota during the last four months of 1926, German mills must pay to the Cartel fines totaling about \$2,700,000.

## German Alloy Steel Makers to Open Foreign Offices

HAMBURG, GERMANY, Jan. 17.—The corporation recently formed, by merger of the various German producers of alloy steels, is maintaining headquarters at Bochum and a branch office in Remscheid, which will handle automotive steels only. A few of the unprofitable plants are to be closed and it is planned to enlarge others and install modern equipment in all plants under control of the corporation.

Special efforts will be made to develop more export trade, as the domestic market in Germany is limited to a consumption of about 50 per cent of the total production. It seems to be expected that the new corpora-

British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at \$4.85 per £ as follows:

Durham coke, f.o.b.	£1 5s.		\$6.06
Bilbao Rubio ore, 1 fdy.	1 2	to £1 2½s.	5.33 to \$5.45
Cleveland No. 1 fdy. (nom.)	4 7½		21.22*
Cleveland No. 3 fdy.	4 2½		20.00*
Cleveland No. 4 fdy.	4 1½		19.76*
Cleveland No. 4 forge	4 1		19.64*
Cleveland basic (nom.)	3 15	to 3 15½	18.18 to 18.30
East Coast mixed	4 10	to 4 11	21.82 to 22.06
East Coast hematite	4 8	to 4 12½	21.34 to 22.43
Rails, 60 lb. and up	7 15	to 8 0	37.58 to 38.80
Billets	7 0	to 7 5	33.95 to 35.16
Ferromanganese	16 0		77.60
Ferromanganese (export)	15 15		76.38
Sheet and tin plate bars, Welsh	6 15	to 7 10	32.73 to 36.37
Tin plate, base box	1 0	to 1 0½	4.85 to 4.97
Black sheets, Japanese specifications	15 0	to 15 10	72.75 to 75.17
Ship plates	8 10		1.84
Boiler plates	10 15	to 11 5	2.32 to 2.43
Tees	8 15	to 9 5	1.89 to 2.00
Channels	8 0	to 8 10	1.73 to 1.84
Beams	7 15	to 8 5	1.67 to 1.78
Round bars, ¾ to 3 in.	8 5	to 8 15	1.78 to 1.89
Steel hoops	10 10	and 11 0	2.28 and 2.39
Black sheets, 24 gage	12 0	to 12 5	2.60 to 2.65
Galv. sheets, 24 gage	15 5	to 15 10	3.30 to 3.35
Cold rolled steel strip, 20 gage, nom.	18 0		3.91

\*Export price, 6d. (12c.) per ton higher.

†Ex-ship, Tees, nominal.

## Continental Prices, All F.O.B. Channel Ports (Per Metric Ton)

Foundry pig iron: (a)			
Belgium	£3 15s.	to £3 18s.	\$18.18 to \$18.90
France	3 15	to 3 18	18.18 to 18.90
Luxemburg	3 15	to 3 18	18.18 to 18.90
Basic pig iron:			
Belgium	3 9	to 3 11	16.73 to 17.21
France	3 9	to 3 11	16.73 to 17.21
Luxemburg	3 9	to 3 11	16.73 to 17.21
Coke	0 18		4.37
Billets:			
Belgium	4 12½		22.42
France	4 12½		22.42
Merchant bars:			C. per Lb.
Belgium	5 0		1.10
Luxemburg	5 0		1.10
France	5 0		1.10
Joists (beams):			
Belgium	5 0		1.10
Luxemburg	5 0		1.10
France	5 0		1.10
Angles:			
Belgium	5 4		1.14
½-in. plates:			
Belgium (nominal)	6 12½		1.45
Germany (nominal)	6 12½		1.45
¾-in. ship plates:			
Belgium	6 2½		1.33
Luxemburg	6 2½		1.33
Sheets, heavy:			
Belgium	6 3	to 6 4	1.33 to 1.34
Germany	6 3	to 6 4	1.33 to 1.34

(a) Nominal.

tion will endeavor to follow the example of the Swedish manufacturers of alloy steels and open sales offices in various foreign markets, such as South Africa, Japan, the United States and South American countries. The corporation is also believed to be planning the establishment of a laboratory for experimental work on alloy and special steels.

#### Bamboo Steel Exports Increase

Several German mills, some of which originally introduced bamboo steel to the Chinese market but lost the greater part of this business during the World War, are becoming quite active with a view to regaining this market. One method has been to forward large lots on consignment to former customers. The largest maker of bamboo steel is the Oberschlesische Eisenindustrie at Gleiwitz, Upper Silesia, but there are several smaller producers in the Ruhr. Prices vary with the size of the order. At present, assortments of the usual specifications,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and  $\frac{1}{2}$ -in., packed in 100-lb. bundles for Shanghai or in piculs (133 lb.) for Hongkong, are quoted at £15 15s. to £17 5s. per ton (\$3.47 to \$3.80 per 100 lb.), depending upon the quantity involved, with an extra charge of 15s. (\$3.63) per ton for  $\frac{1}{2}$ -in. only. These prices are for untempered bamboo steel. When tempered, an extra £1 (\$4.85) per ton, and sometimes more, is added. The freight rate from Hamburg to Chinese ports is 40s. (\$9.70) per ton, less 5 per cent for primage.

### FRENCH MARKET DULL

#### Production Being Reduced—Export Small Despite Suspension of Export Tax as Aid

PARIS, FRANCE, Jan. 14.—Much of the optimism, with which business for the new year had been viewed, has been dissipated by the developments of the first half of January. It had been believed that, with the franc at a stable level and higher than for some time, business would begin a slow recovery. Thus far, however, despite a fairly stable exchange and a higher value to the franc, business has been confined to closing a few small orders that had been pending for some time. Current buying is only for immediate needs and export trade is but little better than domestic business. In export markets, French quotations are considered too high, so, as an aid to producers, the Government has decided to suspend the export tax. This, however, will be insufficient to develop larger foreign trade unless wages are reduced and inland freight rates are lowered.

**Pig Iron.**—Production of foundry grade is being limited and several furnaces have been blown out. The export price of No. 3 foundry has been reduced from £4 5s. \$20.60) to £4 (\$19.40) per metric ton, f.o.b. Antwerp, with £3 17s. (\$18.66) per ton, the price for British consumers.

**Semi-Finished Material.**—Prices are soft and export has almost ceased, particularly the large export business developed with Great Britain during the coal strike. Material for spot shipment is abundant with prices declining daily. Nominally, the smaller sizes of blooms are quoted at £4 13s. to £4 14s. (\$22.55 to \$22.80) and the larger sizes at £4 7s. to £4 8s. (\$21.08 to \$21.33) per ton, f.o.b. Antwerp. Billets are soft at £4 19s. 6d. (\$24.12) per ton.

**Finished Material.**—With buying confined to immediate requirements of consumers, prices are tending downward, as mills endeavor to increase their backlogs. Depending upon the tonnage involved, beams range from £5 4s. to £5 7s. per metric ton (1.14c. to 1.16c. per lb.), f.o.b. Antwerp. Bars range from £5 5s. to £5 6s. per ton (1.16c. to 1.17c. per lb.), f.o.b. Antwerp. The government railroads are asking for 6000 tons of steel ties for heavy rails. Bids were received of 780 fr. (\$30.73), f.o.b. Rombas by the Société Lorraine des Acieries de Rombas and 782.50 fr. (\$30.83), f.o.b. Thionville or 795 fr. (\$31.32) f.o.b. Hagondange by De Wendel & Co.

### RUSSIA CUTS EXPENDITURES

#### Electrification Appropriations Reduced—Increase in Steel Output Small

MOSCOW, RUSSIA, Jan. 12.—The governmental plan for largely increasing the output of pig iron and steel in the new business year, October, 1926, to October, 1927, is encountering difficulties. The proposed increase was 34 per cent in pig iron and 18 per cent in ingot production, with 16 per cent in rolled products.

Execution of the plan was dependent upon new capital investments in all branches of the metal industry, including non-ferrous products, to a total of about 270,000,000 rubles. Financial stringency has forced a reduction in this total to 230,700,000 rubles. In addition, there is a shortage of fuel, including coal, oil and wood, so that arrangements are being made for importation of coal from Poland. A further difficulty is the continued rise in production costs. It was planned to reduce such costs in the last fiscal year, but instead there was an increase of about 1.5 per cent, while in the iron and steel industry the increase was 5.8 per cent with the engineering branch advance at 6 per cent.

Reduction has also been made in the amount to be expended for electrification in 1926 to 1927, the current fiscal year. Expenditures have been decreased from the expected total of 182,000,000 rubles to 150,000,000 rubles. The Dnieperstroï, the large power unit on the Dnieper River, will continue under construction. Provisionally, as sanctioned by the Council of Labor and Defense, this station is to be built for development of 150,000 hp.

Another large project for this year is construction of the Turkestan-Siberian Railway, 1420 kilometers in length, which it is expected will be completed in five years. This, it is believed, will encourage the growing of cotton in central Asia and provide a means of delivering Siberian grain and lumber.

In November, 1926, the *Azneft* and *Grozneft*, the first sea-going vessels built by the Soviet Government, were launched. The shipbuilding program is to be extended.

### Germany Considers Centralization of Gas and Electric Production

HAMBURG, GERMANY, Jan. 17.—The project of the German steel industry, in combination with the Coal Cartel, to furnish all the electricity and gas needed in Germany by the construction of huge gas and electric units in the Ruhr and in the Province of Saxony, is expected to receive approval at the next session of the Reichstag. It is estimated that the cost of electricity would be reduced by about 30 per cent and the cost of gas by about 25 per cent under this plan. Should this plan be adopted, the steel mills would receive sufficient tonnage of pipe and fittings to absorb almost completely the output for the next two years.

Output of wire rods in Germany during 1926 reached a record total. Production amounted to 1,080,000 tons, compared with 860,000 tons in 1925, or compared with pre-war production, 1,040,000 tons in 1912 and 1,070,000 tons in 1913. The first half of last year was not active but production increased in the second half to more than 100,000 tons a month. Decline in output is expected during the early part of this year.

Investigation by various chambers of commerce and business papers of the report that foreign consumers were willing to pay higher prices for bolts, nuts, rivets, wire products, screws, sheets, plates and similar material, when offered by German producers, than could be obtained by French and Belgian sellers, has shown that this is a result of the currency situation rather than a proof of superior quality. German deliveries are good, with regular ocean shipments and better service on the railroads, so that the foreign buyer encounters very little delay in shipments. This situation is paralleled by the conditions prevailing at the time of German currency inflation, when buyers would pay higher prices to French and Belgian makers to insure prompt and certain delivery.



## BELGIAN PRICES DECLINE

### Domestic and Export Markets Quiet—French and Luxemburg Competition Keen

ANTWERP, BELGIUM, Jan. 15.—There is very little interest in buying, so that with export and domestic purchasers at a low ebb of activity, the market is showing continued weakness. More and more mills, as they find their backlogs diminishing, are offering concessions. Competition from French and Luxemburg mills is still a feature of business. Meanwhile, labor is demanding a further increase of wages by 5 per cent and effective Jan. 15, railroad freight rates are to be increased considerably. In consequence, producers are faced with higher manufacturing costs and a declining market.

**Pig Iron.**—Purchasing is smaller than for some time and furnaces are beginning to pile iron on their yards. The domestic price of No. 3 phosphoric foundry iron has been established by the syndicate at 725 French francs (\$28.57) or 145 Belgian francs (\$20.15) per metric ton, f.o.b. furnace. The price, however, is considered too high. Export prices have been set at £4 per ton (\$19.60), f.o.b. Antwerp, except for British consumers, who are quoted £3 16s. 6d. per ton (\$18.75).

## IMPORT BUSINESS SMALL

### Prices Slightly Lower But Sales Are Restricted—Rejected Rails Offered Here

NEW YORK, Feb. 1.—Current buying of foreign steel products by American consumers continues small, but there are a few desirable tonnages of bars and structural material under quotation for users and distributors in the South and in the New York and New England districts. Continental prices are slightly lower than recently, with mild steel bars at 1.80c to 1.85c. per lb., duty paid, and structural material at about 1.75c. per lb., duty paid.

Investigation of dumping of German steel is still under way by the Anti-Dumping Unit of the Treasury Department, but no action has been taken as yet. There seems to be some question as to the proper interpretation of the portion of the paragraph on "Foreign Market Value," in which appears the phrase "similar merchandise." Importers of German material, in addition to claiming that practically all products shipped to the United States have no market value in Germany, as they are not made to the German domestic specifications, claim further that in most cases they are securing the high import price, although their quotations are below the American mills. It is also understood that several of the most convincing examples of dumping that have become available involve other than German material.

While there may be a slight increase in importation during this year of continental cast iron bell and spigot pipe, as a result of greater activity by a German maker, it can apparently exercise but little effect on the market here. In the past, the greater portion of foreign pipe sold in the United States has originated in France at the Pont-à-Mousson works, which claims to be second in capacity to the leading American maker. The German maker, which has sold a small volume of pipe on the Pacific coast and in the Southwest for several years, is evidently intending to become more active on the Atlantic coast. The capacity of the company is limited, however, and it is estimated that not more than about 10,000 tons a year will be available for sale in the eastern territory.

A French export house, which acts as purchasing agent in European markets for various American consumers, is offering a special lot of 2275 tons of 45 and 46-kg. rails for shipment to the United States or any other foreign market. The sections, which were rolled for export to a European consumer, were rejected solely because the elongation is slightly below the limit specified. The rails are classified as "seconds"

f.o.b. Antwerp. Even this lower price to British consumers is developing but little business, with British furnaces reducing their quotations, as more go into blast.

**Semi-Finished Material.**—With the exception of a few mills, which still have a small backlog of business, makers are offering substantial reductions in price, but with little or no response on the part of buyers. Prices are so irregular that determination of the current market is difficult. Nominally, billets are £4 19s. to £5 per ton, f.o.b. Antwerp (\$24 to \$24.25) for 2-in. to 4¼-in. with 3-in. to 4-in. at £4 17s. per ton (\$23.50). Blooms are still showing some strength at £4 8s. per ton (\$21.34) for 6-in. and above and £4 14s. per ton (\$22.80) for 4-in. to 5-in.

**Finished Material.**—Prices are irregular and tending downward with the market inactive. French and Luxemburg competition is severe and exporters show but little inclination to place business with Belgian mills. Plain steel bars range from £5 5s. to £5 6s. per metric ton (1.15c. to 1.16c. per lb.) and deformed steel bars at £5 15s. to £5 16s. per ton (1.26c. to 1.27c. per lb.), f.o.b. Antwerp. Wire rods continue at £6 per metric ton (1.30c. per lb.), f.o.b. Antwerp. Normal specifications on beams develop prices of £5 4s. 6d. to £5 5s. 6d. per ton (1.33c. to 1.43c. per lb.), f.o.b. Antwerp.

and as such a permit for exportation to the United States could be obtained.

Export business from the United States continues small with only occasional purchases, in tonnages seldom in excess of warehouse lots. Most of this small lot business is from South American and Cuban buyers. The Japanese market is quiet with the exception of some small inquiries for tin plate and rails. One Japanese railroad is inquiring for 5½ miles of 60-lb. rails for May-June delivery and there is another inquiry in the market for 5 miles of 100-lb. rails from a Japanese railroad. The Dai Nippon Beer Brewery Co., which has been in the market for 3000 base boxes of coke tin plate for the manufacture of crown bottle caps, has placed its order with a large Japanese export house and the tin plate will be shipped by the leading American export interest. There is also some small business from Japan in electrical sheets.

### British Steel Imports in 1926 a Record—Exports Declined

Data recently made public show that the imports of iron and steel into Great Britain, scrap being deducted, were 3,740,279 tons in 1926, and that the exports were 2,987,669 tons. A comparison of these data with similar data for the post-war years and for 1913 is found in a table compiled by the London Iron and Coal Trades Review, which is as follows:

Year	Imports, Tons	Exports, Tons	Excess of Exports, Tons
1913.....	2,230,955	4,969,225	2,738,279
1920.....	1,107,598	3,251,225	2,143,627
1921.....	1,640,024	1,696,889	56,865
1922.....	881,284	2,397,135	2,515,901
1923.....	1,322,137	4,917,537	2,995,400
1924.....	2,429,385	3,851,435	1,422,050
1925.....	2,719,715	3,731,096	1,011,381
1926.....	3,740,279	2,987,669	752,610*

\*Excess of imports.

So large were the imports last year that there was an excess of 752,600 tons over exports. A feature of the import movement was the large receipts of semi-finished steel, aggregating 1,562,100 tons, or over 41.5 per cent of the total imports.

Shipments of manganese ore from Rio de Janeiro to the United States during the first 10 months of 1926 amounted to 253,640 gross tons, valued at \$3,002,499, as compared with 200,612 tons, valued at \$2,465,297, in the corresponding period of 1925, according to a report received by the Department of Commerce from Consul D. A. Willson, Rio de Janeiro. Practically all of the manganese ore exported from Brazil is shipped from that port.

# Machinery Markets and News of the Works

## SLIGHTLY IMPROVED TONE

### January Machine Tool Sales Low but Outlook Grows Better

#### Business Confined Largely to Orders for Single Machines with Automobile Industry and Railroads Lagging

ALTHOUGH January sales of machine tools were disappointingly small, scarcely exceeding those of December, the outlook appears to some of the larger machine tool builders to be somewhat better, and an improving rate of buying is expected during the next two months. Some estimates are that January business was about 70 per cent of what is considered a "normal" month.

## New York

New York, Feb. 1.

MACHINE tool sellers are expressing a little more satisfaction over the outlook for business. In the past week some of them have had fairly good orders, mostly for single machines. They are encouraged by the fact that users of tools are showing less hesitation in placing orders than at the opening of the year. The American Car & Foundry Co. has bought a number of machines for its Pacific Coast bus plant for work on Hall-Scott motors. Other orders of the week include the following: 44-in. boring mill, three 24-in. vertical drilling machines and a floor grinder to the New York Central Railroad; a double-end punch and shear to the Big Four; a 16-in. lathe to the International Harvester Co., Chicago; a 13-in. lathe to the Western Electric Co.; a 3-spindle drilling machine to the Royal Typewriter Co.

The Magnus Co., Inc., 111 Broadway, New York manufacturer of armature bearings and kindred products, is said to have plans under advisement for extensions and improvements in its foundry on Schenectady Road, Albany, N. Y.

The Board of Education, 500 Park Avenue, New York, will install manual training equipment in the proposed addition to the DeWitt Clinton High School, Moshulu Parkway, the Bronx, estimated to cost \$3,357,000, for which bids are being asked on a general contract until Feb. 23. William H. Gompert, Flatbush Avenue Extension and Concord Street, Brooklyn, is architect.

The Warlou Mfg. Co., Inc., 129 Crosby Street, New York, manufacturer of lamp mountings, etc., has leased space in the building at 130-2 West Twenty-fourth Street, for expansion.

A. E. Fitkin & Co., 165 Broadway, New York, operating electric light and power utilities in several states, is arranging an expansion and improvement program in 1927 to cost approximately \$28,000,000, of which about \$20,000,000 will be used for major extensions, including electric generating plants, gas plants, power substations, transmission lines and ice-manufacturing plants. The company's properties are under the direction of the General Engineering & Management Corporation, same address. The Jersey Central Power & Light Co., one of the company units, with operating headquarters at Morristown, N. J., has work in progress on a new steam-generating plant at Whippany, N. J., to cost in excess of \$2,000,000 with equipment.

The Consolidated Gas Co., 130 East Fifteenth Street, New York, has plans nearing completion for a new automobile service, repair and garage building on East Fifty-seventh

The automobile industry and the railroads are somewhat laggard in buying. Industrial operations generally are being maintained at a fairly good rate, and purchases of machines by manufacturers in varied lines are apparently being made with less hesitation than was in evidence at the opening of the year.

Conditions are somewhat at variance in different sections of the country, but as a whole the volume of inquiries is somewhat more promising, and if the trend of business activity is upward during the next month or two it is expected that many of these inquiries will develop into orders.

About 600 used tools were disposed of at public auction at the plant of the Bock Bearing Co., Canton, Ohio, following the purchase of that property by the Timken Roller Bearing Co. The operations of the Bock Bearing plant will be merged with those of the Timken company at Canton.

Street, to cost in excess of \$200,000 with equipment. J. F. Hunter is company architect.

The Complete Machinery & Equipment Co., 233 West Forty-second Street, New York, is said to be planning the construction of a new storage and distributing plant at Long Island City, to cost in excess of \$70,000 with material-handling and other equipment.

The Commissioner of Plant and Structures, Municipal Building, New York, is asking bids until Feb. 14 for electrical and mechanical equipment for the municipal destructor plant, to be used by the department of street cleaning.

The Westchester Lighting Co., 18 South Broadway, Yonkers, N. Y., has plans for a new three-story equipment and service building, 50 x 125 ft., at Ossining, N. Y., to cost in excess of \$90,000, and will soon ask bids, Beverly S. King, 18 East Forty-first Street, New York, is architect.

The Texto Metal Products Corporation, 107 Greene Street, New York, has leased a floor in the building at 27 East Tenth Street, for expansion.

The Albany Port Commission, Albany, N. Y., has authorized plans for its proposed new grain elevator, to be 70 x 215 ft., with capacity of 1,000,000 bu. per annum. It will cost in excess of \$1,000,000, with loading, screening, conveying and other machinery. E. P. Goodrich is port engineer.

The Carteret Foundry Co., 2 Pacific Avenue, Jersey City, N. J., manufacturer of sash weights and other rough iron castings, has taken out a permit for a two-story addition to cost about \$42,000.

The City Council, Paulsboro, N. J., is said to be planning the installation of pumping machinery in connection with proposed extensions and improvements in the municipal water-works to cost \$150,000.

The J. L. Hammett Co., 380 Jelliff Avenue, Newark, N. J., manufacturer of school equipment and supplies, has acquired property adjoining its plant, 50 x 105 ft., and plans the early construction of an addition.

The Bertolette Machine Tool Co., 224 Culver Avenue, Jersey City, N. J., in the latest issue of its *Illustrated News*, lists a large number of used machine tools, featuring planers and shapers, milling machines, pipe and bolt machines, gear cutters and many other machines of miscellaneous types.

Henry M. Waite, Inc., 51 East Forty-second Street, New York, has been organized to act as a distributor in the New York territory for the Thies Unit-Steel Products, Dayton, Ohio.

Harris Alloys, Inc., the National Alloyed Metals Co. and the Murray-Harris Wire Co., all of Newark, have been consolidated under the name of the National-Harris Wire Co. with executive offices at 113 Orchard Street, Newark. The company's rod mill is at 51 Rome Street and its wire mill at 605 North Third Street.

The Magnolia Metal Co. has moved its New York office to the New York Evening Post Building, 76 West Street.



## New England

Boston, Jan. 31.

**A**LTHOUGH January sales of new machine tools in this district have not been as heavy as anticipated, they were larger than those for January, 1926, and there are indications that February also will exceed last year. Two leading central Massachusetts manufacturers will shortly approve 1927 budgets calling for good sized lists of equipment, and a Rhode Island shop is also expected to approve its budget calling for a fairly large list. These companies, together with others, probably will spread purchases over a period of several months.

Among the tools reported sold the past week were two radial drills, a No. 24 Tri-Way Universal boring machine, three fairly large lathes, a used Garvin die slotter and miscellaneous used equipment. An East Walpole, Mass., firm is in the market for a large used boring mill, and another Massachusetts shop desires a similar tool and a large planer.

Fay & Scott, Dexter, Me., lathes, started the year with its plant running practically 100 per cent of capacity and with unfilled orders sufficient to maintain that operation for six months. Its activities are confined very largely to the production of special machinery.

The Westinghouse Electric & Mfg. Co., Springfield, Mass., has practically completed arrangements to manufacture radio transmission apparatus at Chicopee, Mass. Production probably will start late in the summer. It is planned to employ 500 at this plant.

The Phillips & Slack Granite Co., Northfield, Vt., is having plans prepared for a machine shop to replace one destroyed by fire last week. Lifting equipment may be included in its requirements.

Edward T. Hartman, room 37, State House, Boston, is preparing plans for a pumping station and sewage system for Saugus, Mass. Charles E. Light, Saugus, is chairman of the committee in charge.

The Decarie Incinerator Co., 342 Madison Avenue, New York, has the general contract for the erection of a two-story, 61 x 99 ft., incinerator plant to cost \$353,000 for Providence, R. I. Dr. Martin S. Budlong, City Hall, Providence, is chairman of the board of health.

The Narragansett Co., Providence, R. I., recently organized to take over and consolidate the Narragansett Electric Lighting Co., same city, and its affiliated organizations, including the Mystic Power Co., has arranged for a bond issue of \$27,500,000, a portion of the proceeds to be used for extensions and improvements. L. C. Gerry is president.

The Standard Oil Co. of New York, 26 Broadway, New York, and Forest Street, Norwich, Conn., has plans for a new power house in connection with an oil storage and distributing plant on local site, to cost approximately \$100,000 with equipment.

A manual training department will be installed in the basement of the new two-story and basement high school to be erected by the Board of Education, Farmington, Conn., Thomas S. Rourke, chairman of the building committee, for which bids are being asked on a general contract until Feb. 10. It is estimated to cost \$180,000. The School Plan Service Bureau, 363 Main Street, Middletown, Conn., is architect.

The Indian Motorcycle Co., Springfield, Mass., has completed negotiations for the purchase of the plant and business of the Michigan Motors Co., Detroit, manufacturer of Ace motorcycles and parts, and will consolidate with its organization. Expansion in production is planned.

Following the recent acquisition of the plant of the Blue Ribbon Body Corporation, Fairfield Avenue, Bridgeport, Conn., by the H. F. Holbrook-Henry Brewster Corporation, lately organized, for the production of custom automobile bodies, bids are being asked for the erection of two additions, one three-stories, 53 x 156 ft., and the other one-story, 175 x 200 ft., to cost about \$150,000 with equipment. Fletcher-Thompson, Inc., 543 Fairfield Avenue, Bridgeport, is architect and engineer.

The American Writing Paper Co., Holyoke, Mass., has been organized under Delaware laws with capital of \$24,500,000, to take over the property of the company of the same name, with mills at Holyoke and other points in Massachusetts and Connecticut, in financial difficulties for several years. The new company plans extensions and improvements in the New England properties and will concentrate operations in this district, following the sale of mills previously operated in the Middle West.

The Bangor Hydroelectric Co., Bangor, Me., is arranging for a stock issue of 50,000 shares, the majority of the proceeds to be used for extensions and improvements in hydroelectric generating plants and transmission lines. Edward M. Graham is president.

The Adlerhurst Iron Co., 52 Richards Street, New Haven, Conn., has been incorporated with a capital stock of \$50,000 to take over the partnership formerly operated under the name of the Yale Safe & Iron Co., and will continue to manufacture architectural and ornamental iron work.

George T. Reynolds & Son, Inc., 54 Friendship Street, Providence, R. I., has been organized to deal in new and used machinery.

The New England Metal Products, Inc., a new company, which will be located at Meriden, Conn., has purchased a part of the metal division of the Warner Brothers Co., Bridgeport, Conn., corset manufacturer. The metal division of the latter company has been devoted largely to the manufacture of the metal parts of corsets and has also done stamping work on contract. The New England Metal Products, Inc., will start operations about Feb. 15. Officers of the corporation are: Lancaster P. Clark, Fairfield, Conn., president; Roy E. Coleman, Meriden, Conn., vice-president and treasurer; Jonathan Grout, Bridgeport, Conn., secretary. Some of the equipment of the metal division of the Warner company will soon be offered for sale.

## Chicago

CHICAGO, Jan. 31.

**D**EMAND for machine tools in this district has fallen off with the closing days of January. Active inquiry held over from December was in sufficient volume at least to have given dealers some promise of a good mid-winter month. The bulk of that business now has been placed and new inquiries are coming out slowly. Estimates vary as to the total volume of sales for the month, but a general average is close to the level of December.

The trade is looking forward to several railroad lists which are expected to be made public in February. Prices generally are steady, but there is some talk of an advance in certain types of drills. The National Malleable & Steel Castings Co. is dismantling one of its Chicago plants and disposing of a few used machine tools. Demand for rebuilt tools has held at a fairly constant level during the month.

The Rockford Machine Tool Co., Rockford, Ill., has purchased from the National Lock Co., the manufacturing rights, good will, patterns, jigs, fixtures and stock of the Rockford Lathe & Drill Co. The line comprises the Rockford Economy lathes, built in 12, 14, 16 and 18-in. cone and geared-head type.

The Federal Machinery Sales Co., formerly at 12 North Jefferson Street, Chicago, is now established in its new office and sales room at 17 South Jefferson Street.

The People's Gas & Electric Co., Mason City, Iowa, has arranged a fund for extensions and improvements to total about \$125,000. F. A. Hanlon is manager.

The Superior Flake Graphite Co. at present leasing a building at 3612 South Morgan Street, Chicago, will build a plant of 25,000 sq. ft. at the corner of Sixty-sixth Place and South Laramie Avenue, Chicago.

The National Malleable & Steel Castings Co., is dismantling its plant at 2610 West Twenty-fifth Place, Chicago. A portion of the old equipment is being moved to its foundry at 1400 South Fifty-second Avenue, Cicero, Ill.

The Chicago Board of Education, 650 South Clark Street, will build a two-story school and power house, 90 x 348-ft., at 5161 South Linder Avenue, to cost \$500,000.

The Sly Mfg. Co., 332 South Adams Street, Peoria, Ill., manufacturer of fans, blowers, etc., has plans under way for a one-story and basement factory, 160 x 125 ft., to cost about \$30,000 with equipment. J. E. Schleich is president.

The Potter Mfg. Co., North Chicago, Ill., manufacturer of electrical equipment and supplies, has plans for a one-story addition to cost \$25,000. E. F. Potter is head.

The Northern States Power Co., 15 South Fifth Street, Minneapolis, Minn., plans extensions and improvements in its steam-operated electric power house at Mankato, Minn., to cost in excess of \$40,000 with equipment. Robert F. Pack is vice-president and general manager.

The Bodine Electric Co., 2254 West Ohio Street, Chicago, manufacturer of electrical equipment and supplies, is completing plans for two additions, one and two-stories, 29 x 50

## The Crane Market

WHILE there is a moderate volume of activity in small overhead equipment, particularly hand power cranes and chain blocks, the larger capacity electric overhead crane field continues quiet. Inquiry for locomotive cranes is increasing, particularly requests for prices on used machines. In small overhead equipment, the International Paper Co., 100 East Forty-second Street, New York, is taking bids on a 15-ton and some smaller hand power cranes, for shipment to Canadian paper mills. There is another inquiry current for a Canadian paper mill, which includes a 15-ton electric and several hand power cranes. The Canadian tariff of 27 per cent and sales tax of 5 per cent, however, are obstacles to successful bidding by builders in the United States. The port of Buenos Aires, Argentina, will open bids in March, on 34 3-ton portal cranes, 24 1½-ton pillar cranes and three 1½-ton column cranes for two new piers in the harbor. The C. H. Young Co., St. Paul, Minn., is inquiring for a used 15- to 25-ton, 40- to 50-ft. span overhead crane.

Among recent purchases are:

Walsh Construction Co., New York, a 25-ton, standard 8-wheel locomotive crane from the Browning Crane Co.

National Pole & Treating Co., Minneapolis, Minn., a 25-ton locomotive crane from the American Hoist & Derrick Co.

Hubbard & Co., Emeryville, Oakland, Cal., a 5-ton, 53-ft. span overhead crane from the Northern Engineering Works.

Continental Heater Corporation, Dunkirk, N. Y., a 5-ton, 100-ft. span yard crane from the Northern Engineering Works.

Standard Seamless Tube Co., Economy, Pa., a 15-ton, 77-ft. span overhead crane with 6-ton auxiliary, from the Alliance Machine Co.

Calumet Steel Co., Chicago Heights, Ill., a 25-ton, standard gage, 8-wheel, gasoline driven, locomotive crane, with magnet, from the Orton Crane & Shovel Corporation.

I. Winkler, Chicago, a 5-ton, 36-ft. span electric traveling crane from the Northern Engineering Works.

Chapman Valve Mfg. Co., Indian Orchard, Mass., 27 small capacity jib cranes from H. D. Conkey & Co., and 31 electric hoists from the American Engineering Co.

Missouri Pacific Railroad Co., a 2-ton, hand power, jib crane from H. D. Conkey & Co.

City of Cleveland, a 2-ton, single I-beam, hand power crane from H. D. Conkey & Co.

Great Western Paint Mfg. Co., Kansas City, Mo., a 1-ton, single I-beam, hand power crane from H. D. Conkey & Co.

ft., and 95 x 121 ft. It is expected to ask bids on a general contract in about a month. Ronneberg & Pierce, 10 South La Salle Street, are architects.

The Eastern Minnesota Power Co., Pine City, Minn., is considering extensions and improvements in its power plant at Milaca, Minn., and the installation of additional machinery. The entire project will cost about \$50,000.

The Jordan Machine Tool Co., 1854 East Twenty-eighth Street, Minneapolis, Minn., has plans under way for a one-story addition, 70 x 115 ft., to cost about \$25,000. It is understood that bids will be asked late in the spring. C. J. Bard, Builders' Exchange, is architect.

The Town Council, Dupu, Ill., will soon take bids for equipment for a municipal waterworks, to include two centrifugal pumps, one motor-driven, the other connected to gasoline engine; and 100,000-gal. capacity steel tank and tower. The installation will cost \$125,000. Sheppard & Morgan, Faulstich Building, Alton, Ill., are engineers.

The Lennox Heater Co., Marshalltown, Iowa, has been organized with a capital stock of \$10,000, as a subsidiary of the Lennox Furnace Co., to manufacture heating equipment.

## Philadelphia

PHILADELPHIA, Jan. 31.

NEGOTIATIONS have been closed by Edwin R. Mack, president Monarch Machinery Co., 300 North Third Street, Philadelphia, for the purchase of the former plant of the Bock Bearing Co., Toledo, Ohio, manufacturer of roller bearings, for \$190,000. The new owner plans to use the factory for a branch works.

The Imperial Type Metal Co., 1220 North Howard Street, Philadelphia, has awarded a general contract to Roberts & Roller, Inc., 1700 North Walnut Street, for its new one-story and basement plant to cost about \$75,000 with equipment. W. S. Yeger is one of the heads of the company, in charge.

The General Baking Co., 342 Madison Avenue, New York, has acquired about 6 acres at Rising Sun and Godfrey Avenues, Philadelphia, for the erection of a new plant to cost in excess of \$750,000 with equipment.

The CertainTeed Products Corporation, Second and Erie Streets, Philadelphia, manufacturer of roofing, etc., has plans for an addition to the power house at its plant at Niagara Falls, N. Y., to cost in excess of \$30,000 with equipment. W. G. Will is company engineer, Philadelphia headquarters.

The Philadelphia Electric Co., Tenth and Chestnut Streets, Philadelphia, has arranged for an increase in capital from \$100,000,000 to \$150,000,000, a portion of the proceeds to be used for extensions in power plants and system.

The R. & M. Service Garage Corporation, Thirty-third and Jefferson Streets, Philadelphia, is completing plans for a two-story service, repair and garage building, 90 x 180 ft., to cost about \$90,000 with equipment. Mardel and Charles Robertson head the company.

The Baldwin Locomotive Works, 500 North Broad Street, Philadelphia, has plans under way for two additional buildings at its Eddystone plant, to be used as general machine shops and brass-working shops, respectively. Work is in progress on a new tender shop, and erection of an administration building will be arranged soon.

The Roberts Filter Co., 611-13 Columbia Avenue, Darby, Pa., has plans under way for a new one-story building to cost about \$50,000, to replace a portion of the works recently destroyed by fire. F. R. Haddock is in charge.

The Boyertown Electric Co., Boyertown, Pa., is forming a subsidiary organization, to be known as the Bechtelsville-Berks Light & Power Co., to operate in the vicinity of Bechtelsville and other portions of Berks County. Expansion is planned, including increase in power facilities and transmission line construction.

The Board of Education, Birdsboro, Pa., contemplates the installation of manual training equipment in a proposed new high school, estimated to cost \$160,000, for which plans will be prepared by Ritcher & Eller, 147 North Fifth Street, Reading, Pa., architects.

The Common Council, Mount Ephraim, Pa., is said to be planning the installation of pumping machinery in connection with proposed extensions in the municipal water system.

Fire, Jan. 27, destroyed a portion of the machine and repair shop, and equipment storage and distributing plant of the Armstrong & Latta Co., Clinton Street, Camden, N. J., general iron and steel contractor, with loss in excess of \$70,000 with equipment. Plans for rebuilding are said to be under advisement. Headquarters are at 1208 Arch Street, Philadelphia.

The National Public Service Corporation, 165 Broadway, New York, operating properties in eastern Pennsylvania, New Jersey, Delaware and other states, is disposing of a preferred stock issue of \$3,500,000, a portion of the proceeds to be used for extensions in power plants and system. The light and power utilities are operated by the General Engineering & Management Corporation, same address, an affiliated organization. T. R. Crumley is vice-president.

The Board of Education, Altoona, Pa., is considering the installation of manual training equipment in a proposed three-story addition to the junior high school, estimated to cost \$400,000. Plans will be drawn by Herah & Shollar, Commerce Building, architects. The Frank Irving Cooper Corporation, 172 Tremont Street, Boston, is consulting architect.

The Hudson Coal Co., Scranton, Pa., is planning the construction of a new coal breaker in the vicinity of Middletown, Pa., to cost in excess of \$75,000 with equipment.

Motors and other power equipment, conveyors and other machinery will be installed in the four-story and basement printing plant, 110 x 116 ft., to be erected by the Philadelphia Inquirer, Broad and Callowhill Streets, Philadelphia, to cost in excess of \$200,000 with machinery.

The Tremblay Motor Co., 217 North Broad Street, Philadelphia, has leased the three-story building at 235-27 North Broad Street for a new service, garage and repair building.



The Williamsport Wire Rope Co., Williamsport, Pa., has been reorganized, following the purchase of a large interest by a syndicate headed by Robert Gilmore, Edgar Munson, Logan Cunningham and C. M. Ballard. The control of this company passes into the hands of old employees, who will introduce new capital and expand the manufacturing and marketing facilities of the organization. Robert Gilmore, who continues as president, has been associated with the company for 34 years. Edgar Munson is vice-president and treasurer; Logan Cunningham, vice-president and secretary, and C. M. Ballard, vice-president and general sales manager. A new factory, 200 x 450 ft., is now being planned and construction work will begin soon.

## Buffalo

BUFFALO, Jan. 31.

**T**HE Brooks Steam Motor Co., Ltd., Metropolitan Building, Toronto, is considering extensions and improvements in its plant at Kensington and Northumberland Avenues, Buffalo, with installation of equipment, to cost in excess of \$40,000. O. J. Brooks is president.

The Upton Cold Storage Co., Cliff Street, Rochester, N. Y., is considering rebuilding the portion of its cold storage and refrigerating plant destroyed by fire Jan. 25, with loss estimated at more than \$300,000 with machinery.

The Niagara, Lockport & Ontario Power Co., Lafayette Building, Buffalo, has plans under way for extensions in its power house at Andover, N. Y., including the installation of additional machinery. In connection with a new transmission line, the work will cost close to \$250,000.

The Board of Trustees, Orchard Park, N. Y., is asking bids until Feb. 11 for equipment for extensions and improvements in the municipal waterworks, including a 100,000-gal. capacity elevated steel tank and tower. James P. Wells, 80 East Avenue, Rochester, N. Y., is engineer.

Fire, Jan. 26, destroyed a portion of the plant of the Syracuse Plating Works, Syracuse, N. Y., with loss reported in excess of \$25,000 with equipment. Plans for rebuilding are under consideration.

The Harrison Radiator Corporation, Washburn Street, Lockport, N. Y., manufacturer of automobile radiators, is considering the erection of a one-story addition, to cost in excess of \$40,000 with equipment. Improvements will also be made in the present plant.

The General Railway Signal Co., West Avenue, Rochester, is arranging to discontinue the manufacture of electric refrigerating equipment and will devote production solely to railroad signals and interlocking devices. The plant division heretofore given over to the first noted line will be utilized in the future for signal device manufacture.

The Board of Contract and Supply, City Hall, Syracuse, N. Y., is planning the construction of a one-story machine and repair shop to cost about \$25,000 with equipment. Nelson F. Pitts, City Hall, is architect and engineer.

Brace-Mueller-Huntley, Inc., Buffalo and Syracuse, N. Y., has been appointed sales representative in New York and northern Pennsylvania for the Heppenstall Forge & Knife Co., Pittsburgh, and the Heppenstall Forge Co., Bridgeport, Conn.

The Fox Metal Weatherstrip Co., Seneca Falls, N. Y., has been incorporated with a capital stock of \$25,000 to manufacture metal weatherstrip and a special type of roller screen. It will be in the market for machinery from time to time in accordance with a gradual expansion program.

## St. Louis

ST. LOUIS, Jan. 31.

**B**IDS will soon be asked by the St. Louis Ice & Cold Storage Co., 9237 Manchester Road, Manchester, Mo., for a one-story cold storage and refrigerating plant, estimated to cost \$45,000 with equipment. H. G. Clymer, Wainwright Building, St. Louis, is mechanical engineer. William Massit is secretary.

The St. Louis-San Francisco Railway, St. Louis, is said to be planning to rebuild the portion of its plant at Springfield, Mo., destroyed by fire Jan. 24, with loss reported in excess of \$200,000 including equipment.

The Kansas City Garage Co., Kansas City, Mo., has plans for the immediate construction of a new four-story automobile service, repair and garage building to cost approximately \$115,000 with equipment. Frank C. Walter, Tulsa, Okla., is architect.

The Union Electric Light & Power Co. of Illinois, St. Louis, affiliated with the Union Electric Light & Power Co., of the last noted city, has acquired the steam-operated electric generating plant of the Illinois Traction Co., at

Venice, Ill., for \$4,125,000. The new owner will take early possession and contemplates extensions. It has contracted to furnish power requirements of the Illinois Traction Co.

The Gate City Iron Works, Eleventh and Seward Streets, Omaha, Neb., is considering additions to its plant, to include a steel fabricating works, machine shops and foundry, reported to cost in excess of \$90,000 with equipment.

Glen H. Thomas, W. K. & H. Building, Wichita, Kan., architect, has plans in progress for a new one-story aircraft manufacturing plant on local site, for a company whose name is temporarily withheld. It will cost about \$35,000 with equipment. The local Chamber of Commerce is understood to be interested in the project.

The Board of Public Works, Chillicothe, Mo., is asking bids until Feb. 15 for a 1500-kw. turbine and generator for the municipal power station. E. E. Harper, 3031 Park Avenue, Kansas City, Mo. is consulting engineer. W. J. Wiley is secretary of the board.

The Missouri Pacific Railway Co., Railway Exchange Building, St. Louis, has plans under way for a new engine house and repair shops at Coffeyville, Kan., in connection with new terminal yards at this location. The entire project will cost in excess of \$600,000.

The Public Service Co., Tulsa, Okla., has work under way on a new two-story steam-operated electric generating plant at Weleetka, Okla., to be equipped for an initial capacity of 15,000 kw. It is purposed to increase this output to 45,000 kw. in the near future. Sargent & Lundy, 72 West Adams Street, Chicago, are engineers.

The Nebraska Ice & Cold Storage Co., Falls City, Neb., is considering the erection of a new one-story ice-manufacturing plant, 65 x 125 ft., to cost \$50,000 with machinery. R. D. Myers is general manager.

The Westcott Valve Co., Twenty-first Street, East St. Louis, Ill., has plans under way for a one-story addition, 90 x 200 ft., to cost about \$50,000, and will ask bids soon on general contract. Klipstein & Rothmann, 316 North Eighth Street, St. Louis, are architects.

## Cleveland

CLEVELAND, Jan. 31.

**M**ACHINE tool sales were light the past week and little new inquiry came out. January started out with a fair volume of business, but it did not hold up and the month has been disappointing from the standpoint of sales. Demand for machinery from the automobile industry in Michigan continues very light, although a Cleveland manufacturer reports a fair volume of orders from that source for gear hobbers and thread milling machines.

The auction sale of the equipment of the Bock Bearing plant, Toledo, of the Timken Roller Bearing Co., Canton, Ohio, aggregating about 600 tools took place Jan. 26 and 27 and aroused considerable interest. After the Canton company acquired this plant by buying out the Bock Bearing Co., it decided to merge operation with its Canton works. Most of the machinery, including punch, stamping and drilling presses, lathes, milling machines and shapers, brought good prices, but internal grinding machines and screw machines went at a rather low figure. Some of the machinery was bought by dealers and some by users.

The Union Cap Screw Co., Cleveland, recently organized, has built a plant at 13605 Union Avenue and will manufacture a complete line of milled and upset cap and set screws in sizes from 1/4-in. to 1 in. in diameter exclusively. It will also specialize on king bolts and shackle bolts. The factory is 40 x 61 ft., which will be extended shortly by a 47-ft. addition. James J. Korecky, formerly connected with the National Acme Co., Cleveland, is president and general manager.

The Ferro Enameling Co., 4150 East Fifty-sixth Street, Cleveland, is building a 156-ft. extension to its plant.

The Cleveland Pneumatic Tool Co., Cleveland, has taken over the business of the Westinghouse Air Spring Co., New Haven, Conn., and will move the equipment from the New Haven plant to Cleveland. The Cleveland company will continue to manufacture Westinghouse type of air springs in addition to its own line.

The Cleveland Cap Screw Co., 2931 East Seventy-ninth Street, Cleveland, has completed plans for a three-story,

70 x 90 ft. heat treating plant and laboratory. The H. M. Morris Co., 750 Prospect Avenue, Cleveland, is the architect.

The Machine Products Co., 17900 St. Clair Avenue, Cleveland, will build a new plant better suited to its requirements on a new site. A two-story and basement brick and steel building is planned, but construction probably will not be started for several months.

The Cleveland Gasket & Mfg. Co., 1610 West 116th Street, Cleveland, has taken bids for a \$75,000 plant addition.

The Cleveland Electric Illuminating Co. has awarded contract for remodeling a factory it recently acquired at 3601 Ridge Road.

The Barberton Foundry Co., Barberton, Ohio, it is stated, has changed its extension program which called for a foundry addition and instead will erect a complete steel foundry.

The General Excavator Co., Marion, Ohio, recently organizing, has commenced the manufacture of excavating equipment. C. A. Owens is secretary.

The Gardner Tap & Die Co., formerly at 1878 East Eighteenth Street, Cleveland, is established in its new quarters at Marion, Ohio, in the building formerly occupied by the Studebaker-Wulff Rubber Co. In addition to moving its machinery from Cleveland the company has expended \$15,000 for new equipment. John M. Gardner is president, and C. M. Jackson, secretary and treasurer.

The Wilson-Bohanon Co., care Chamber of Commerce, Marion, Ohio, will erect a plant in that city for the manufacture of locks and other hardware. The present location of the company is Brooklyn, N. Y.

Repair parts for Cleveland milling machines may be obtained from the Cleveland Planer Co., Cleveland, L. H. Mester of this company having charge of this service.

The Toledo Machine & Tool Co., Toledo, Ohio, has removed its Detroit office to 3-258 General Motors Building.

The general offices of the Aetna-Standard Engineering Co., successor to the Standard Engineering Co., Ellwood City, Pa., and the Aetna Foundry & Machine Co., Warren, Ohio, are now located on the second floor of the Realty Building, Central Square, Youngstown.

## South Atlantic States

BALTIMORE, Jan. 31.

OFFICIALS of the J. Frank Darling Co., 253 Thirty-sixth Street, Brooklyn, N. Y., have formed a new company under the same name to manufacture hard surface flooring, taking over and expanding the present organization. The reorganization will provide also for the proposed new plant of the company at Wilmington, Del., where 12½ acres has been acquired in the Marine Terminal district. The plant will cost close to \$1,000,000 with machinery. The company is disposing of a bond issue to provide funds for the project. J. Frank Darling is president.

The City Council, Hagerstown, Md., has asked bids on a general contract for its proposed municipal electric light and power plant to cost close to \$150,000 with equipment. Louis T. Klauder, Bankers' Trust Building, Philadelphia, is consulting engineer.

The Carolina Steel & Iron Co., South Elm Street, Greensboro, N. C., has plans for a one-story addition, 45 x 60 ft., to cost about \$21,000 with equipment.

The R. S. Armstrong & Brother Co., 676 Marietta Street, Atlanta, Ga., machinery dealer, has inquiries out for an electric shovel of ½-yd. capacity, full-revolving, crawler type; also for several industrial motors of 150-, 100- and 50-hp. capacity.

The Board of District Commissioners, District Building, Washington, is asking bids until Feb. 7, for refrigerating machinery for installation in the district training school at Laurel, Md.

The Common Council, Fredericksburg, Va., is asking bids until Feb. 17 for equipment for the municipal water plant, including motor-driven centrifugal pumping units and 2,000,000 gal. per day capacity filter plant. Fuller & McClintock, 170 Broadway, New York, are consulting engineers. L. J. Houston, Jr., is city manager.

The Tide Water Power Co., Wilmington, N. C., has arranged for a bond issue of \$2,000,000, a portion of the proceeds to be used for extensions in power plants and system. The company operates the Pinellas County Power Co., with plants and system in Florida.

The Packard Motor Co., 302 Spring Street, Atlanta, Ga., has plans nearing completion for a new one-story service, repair and garage building, 80 x 224 ft., to cost about \$125,000 with equipment. R. C. Snow, Bona Allen Building, is associate architect.

The Board of District Commissioners, District Building, Washington, is said to be planning the installation of manual

training equipment in an addition to the Langley junior high school estimated to cost \$500,000, for which superstructure will soon begin.

R. P. Johnson, Wytheville, Va., machinery dealer, is making inquiries for an industrial locomotive, from 12- to 15-tons capacity, 36-in. gage, Shay or Climax type preferred.

The South Carolina Power Co., Charleston, S. C., is disposing of a bond issue of \$4,000,000, a portion of the fund to be used for extensions and betterments. The company is under the direction of the Southeastern Power & Light Co., an interest of the Alabama Power Co., Birmingham.

The Roaring River Furniture Co., Winston-Salem, N. C., is said to be planning to rebuild the portion of its plant destroyed by fire Jan. 18, with loss estimated at close to \$200,000 with machinery.

The Board of Education, Asheville, N. C., has authorized plans for the construction of a new vocational and trade school to cost about \$100,000. Douglas D. Ellington, 16 Wall Street, is architect. The board is also said to be considering the installation of manual training equipment in a proposed new senior high school to cost \$600,000, for which plans will be drawn by the same architect.

The Allied Chemical & Dye Corporation, 61 Broadway, New York, is said to be planning the construction of a power plant and machine shop at its proposed new plant at Hopewell, Va., where property has recently been acquired. The entire project is reported to cost in excess of \$3,500,000.

The Vinton Lumber & Mfg. Co., Vinton, Va., is planning to purchase a quantity of wood-working machinery, including planer, mortiser, molder and other tools.

The Penn Oil Co., Rosslyn, Va., is said to have plans under way for rebuilding the portion of its storage and distributing plant recently destroyed by fire, with loss estimated at close to \$75,000 including equipment. Paul Himmelfarb is president.

The Hackley-Morrison Co., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for an electrically-operated shovel, crawler type, about ¾-yd. capacity; also for an 80-hp. boiler to operate under 125-lb. working pressure.

## Cincinnati

CINCINNATI, Jan. 31.

WHILE there has been a perceptible improvement in machine tool business the past week, the volume of sales in January did not measure up to that in December and also fell short of bookings in January, 1926. Many important builders report that orders in the past month have amounted to about 70 per cent of what is considered a normal quota. Many transactions now are up for decision, and manufacturers are confident that numerous deals which have been pending for some time will be closed soon. Almost without exception, executives in the local machine tool industry believe that there will be a betterment in sales during February and that by March the market again will be exceptionally active. Production is on a liberal scale and there is little likelihood of decreased operations in the next few weeks.

A company in the Detroit district has purchased nine large lathes from a local builder. The New York Central has bought a 44-in. boring mill and is expected to close for five lathes. The United States Government is in the market for two gap lathes for installation on scout cruisers. The Big Four Railroad has contracted for a No. 2 Long & Allstatter punch and shearing machine, and the Delco Light Co. has bought a 30-in. Pratt & Whitney profiling machine. A northern Ohio company has taken a No. 7 Newark gear cutter. Several orders for planers have been received by a local manufacturer.

The Paul A. Sorg Paper Co., Middletown, Ohio, is considering plans for a new paper mill and power house, reported to cost in excess of \$500,000 with machinery. Warren D. Spengler, Union Trust Building, Cleveland, is engineer.

The State Department of Welfare, Ninth and Oak Streets, Columbus, Ohio, J. E. Harper, director, has plans under way for a new two-story power plant at the Longview State Hospital for Insane, near Cincinnati, to be 40 x 63 ft., estimated to cost \$45,000 with equipment. H. B. Briggs, Ohio-Hartman Building, Columbus, is State architect.

The Kentucky Hydro-Electric Co., Louisville, is said to be arranging for the early construction of its proposed hydro-electric generating plant on the Kentucky River, Dam No. 7, to cost in excess of \$400,000 with machinery.



The Chattanooga Terminal Warehouses, Inc., Chattanooga, Tenn., recently organized by Z. W. Whealand, Mississippi Avenue, and associates, is planning the construction of a cold storage and refrigerating plant in connection with a proposed terminal warehouse. The entire project will cost in excess of \$500,000.

The Chevrolet Motors Co. of Ohio, 4726 Smith Road, Norwood, Cincinnati, has awarded a general contract to Max Penker & Sons, 123 Valencia Street, for a one-story addition to cost about \$75,000. Albert Kahn, Marquette Building, Detroit, is architect.

The Frigidaire Corporation, Dayton, Ohio, manufacturer of electric refrigerating equipment, a division of the General Motors Corporation, Detroit, will occupy the former plant of the Northway Motor Co. at Detroit, recently acquired. The structure will provide about 65,000 sq. ft. of floor space, all of which will be used for increased output.

The Kentucky Mining & Navigation Co., Ashland National Bank Building, Ashland, Ky., Robert A. McQuay president, recently formed with a capital of \$2,000,000, is planning the development of coal properties in Lawrence County. Mining machinery and power equipment will be installed. It is also proposed to construct one or more tipples. The company also plans to operate clay-mining properties in this section.

## Detroit

DETROIT, Jan. 31.

BIDS will be asked early in March by the Department of Public Works, City Hall, Detroit, for its proposed emergency pumping plant for the municipal water system, estimated to cost \$1,000,000 with machinery. Perry A. Fellows, City Hall, is city engineer.

The Gemmer Mfg. Co., 2435 Merrick Avenue, Detroit, manufacturer of steering gears and kindred automobile equipment, has acquired property at Harper and Mount Elliott Avenues as a site for a new plant, for which plans will soon be drawn. It is understood that the present factory will be removed to the new location and considerable additional equipment installed.

The Board of Education, Sault Ste. Marie, Mich., has work under way on a new manual arts building at the high school to cost in excess of \$150,000 with equipment. John D. Chubb, 109 North Dearborn Street, Chicago, is architect.

The Detroit Gray Iron Foundry Co., 6603 Wight Street, Detroit, has awarded a general contract to the Malow Barry Co., 2631 Woodward Avenue, for a new two-story building, 70 x 100 ft. Milder & Eisen, Hammond Building, are architects.

The Detroit Creamery Co., Cass and Adams Streets, Detroit, plans the construction of a power house at its proposed new condensing plant at Midland, Mich. The entire project will cost about \$200,000. Albert Kahn, Inc., Marquette Building, Detroit, is architect.

The American Piston & Machine Co., 1840 Garfield Street, Detroit, is considering the erection of a new plant at Alpena, Mich., and purposes to remove the present factory to this location, with installation of additional equipment. Local business interests at Alpena, are raising a fund of \$25,000 to insure the project.

The American Signs Corporation, Kalamazoo, Mich., recently organized to take over and expand the American Sign Co., with local plant, has work under way on extensions and improvements to increase the former floor space about 50 per cent. The company will specialize in the manufacture of electrically-operated displays. Frank E. Kelsey is president, and Burton C. Wilson, vice-president and general manager.

The Board of Education, Rochester, Mich., contemplates the installation of manual training equipment in a two-story addition to the local high school, estimated to cost \$150,000. Van Leyen, Schilling & Keough, 3440 Cass Avenue, Detroit, are architects.

Vine Peters, Charlotte, Mich., one of the heads of the Charlotte Chair Co., is at the head of a project to establish a new company for the manufacture of furniture, and purposes to occupy the former local plant of the Hancock Mfg. Co., manufacturer of automobile trimmings, which has removed to Jackson, Mich. Woodworking tools and other machinery will be installed.

The Perry & Son Co., Pearl Beach, Mich., is planning to rebuild the portion of its boat-building and repair works destroyed by fire Jan. 21, with loss reported at \$50,000 including equipment.

The Hess Aircraft Co., Wyandotte, Mich., is arranging for expansion in output and will develop capacity for the production of a recently perfected low power airplane designed to carry two persons. Heretofore, the company has been specializing in five-slat planes with 150-hp. motors.

The Murray Corporation of America, Clay and Russell Avenues, Detroit, has been organized to purchase the assets, properties and business of the Murray Body Corporation from the Guardian Trust Co., receiver of the latter corporation.

The Griffiths, Lavigne & Hammel Co., Inc., 5465 Lincoln Avenue, Detroit, has been organized to manufacture a locking device for automobile rims, intended to eliminate bolts, nuts and lugs. Little new equipment will be required, but the company will be in the market for drop forgings and sheet steel.

The Michigan Drawn Metal Moulding Co., St. Clair, Mich., has been organized with a capital stock of \$100,000 to take over the business of the St. Clair Stamping Co. It will continue the manufacture of hollow drawn metal molding on contract.

The Miles Machinery Co., Saginaw, Mich., has purchased the Jackson shaper business from the Crankshaft Machine Co., Jackson, Mich.

## Indiana

INDIANAPOLIS, Jan. 31.

CONTRACT has been let by the Leedy Mfg. Co., 1033 Palmer Street, Indianapolis, manufacturer of bells, chimes, etc., to the John R. Curry Construction Co., Empire Life Building, for a three-story factory addition, 50 x 90 ft., to cost about \$50,000 with equipment.

The Wolf Mfg. Industries, Inc., Quincy, Ill., manufacturer of talking machines and parts, cabinets, etc., has acquired the former plant of the Apperson Brothers Motor Co., Kokomo, Ind., defunct, and will occupy for a new branch plant.

The Wayne Tank & Pump Co., Fort Wayne, Ind., manufacturer of gasoline pumping equipment, etc., is said to be arranging to ask bids early in the spring for a two-story and basement addition, 65 x 85 ft., to cost about \$45,000. Charles R. Weatherhogg, 250 West Wayne Street, is architect. B. F. Geyer is vice-president and general manager.

The Board of School Trustees, Seymour, Ind., plans the installation of manual training equipment in a new one-story and basement school, for which superstructure will soon be placed under way. Harry P. Bartlett, 1050 North Delaware Street, Indianapolis, is architect.

The Board of Education, South Bend, Ind., plans the installation of manual training equipment in its proposed new junior high school, estimated to cost \$275,000, for which bids will be asked late in the spring. Austin & Shambleau, 111 North Lafayette Street, are architects.

The National Equipment Co., Bloomington, Ind., has inquiries out for a 100 ft. boom dragline, with 4-yd. capacity bucket; also, for a direct-fired rotary dryer, to have capacity for handling about 300 tons of limestone per hr., and for a portable asphalt plant.

The Bendix Brake Co., 400 Bendix Avenue, South Bend, Ind., manufacturer of automobile equipment, is beginning the erection of a one-story addition, 100 x 320 ft., to cost in excess of \$75,000.

## Pittsburgh

PITTSBURGH, Jan. 31.

THE month of January has been somewhat of a disappointment in respect to machine tool orders. The first week showed considerable activity, due to the placing of a number of orders that were carried over from last year, but latterly a relatively brisk inquiry has not been accompanied by much actual business.

Plans are being prepared by the Pittsburgh-Des Moines Steel Co., Curry Building, Pittsburgh, for a one-story welding plant, 50 x 175 ft., in the Neville Island district, to cost about \$45,000.

The Pennsylvania Railroad Co., Pittsburgh, has begun the construction of a new mechanical loading plant at its Conemaugh, Pa., yards, to be of 250 tons capacity, with coaling bridge capable of furnishing coal to nine locomotives at one time.

The St. Marys Sewer Pipe Co., St. Marys, Pa., has plans for the construction of an addition to its vitrified sewer pipe works, to be one-story, 300 x 200 ft., and to cost about \$250,000 with equipment. C. A. Searing, Farmers' Bank Building, Pittsburgh, is architect and engineer.

Plans have been authorized by the Elm Grove Mining Co., 266 National Road, Wheeling, W. Va., for the immediate rebuilding of the tippie at its No. 2 mine, recently destroyed by fire, with loss of about \$75,000 including equipment. Joseph Arkwright, general manager, will receive bids.

The Pittsburgh, Virginia & Kentucky Coal Co., Eollansbee, W. Va., is said to be planning the early rebuilding of the tippie at its Cross Creek mines, recently destroyed by fire, with loss reported at \$40,000 including machinery.

The Guyan Machine Shops, Logan, W. Va., have been making inquiries for a milling saw to handle material up to 9 in. in diameter; a 14 x 36 in. lathe, single pulley drive; punch and slitting shear; bake oven suitable for armatures; forge blowers; industrial motors and other equipment.

## Milwaukee

MILWAUKEE, Jan. 31.

LACK of a broad demand for machine tools from the automotive industries keeps the volume of new business within relatively narrow limits, but inquiry from this source is increasing. The January volume of business was somewhat greater than that of December, although falling considerably below the first month of 1926. With a few exceptions, machine shops seem satisfied for the time being to buy only against replacement needs, although existing capacity is well occupied and in some instances increases might be warranted by immediate business.

The Husky Wrench Co., Twenty-seventh and Florence Streets, Milwaukee, has taken additional floor space to provide increase in output, and is buying some miscellaneous equipment. Joseph G. Zummach is president and treasurer.

The Western Printing & Lithographing Co., Racine, Wis., is completing plans for the construction of a new plant of 220,000 sq. ft., at an estimated cost of \$250,000, including new machinery, motors, etc.

The National Gauge & Equipment Co., La Crosse, Wis., ownership of which recently was acquired by the Moto Meter Co. of Long Island City, N. Y., has completed a manufacturing addition increasing the capacity nearly 100 per cent and has enlarged its working force from 800 to 1300. Operations are now at capacity.

The Belle City Mfg. Co., Racine, Wis., manufacturer of individual threshing machines, crawler attachments for tractors and other power farm equipment, has completed arrangements for a resumption of production. Samuel Niccols, formerly of St. Louis, has been engaged as general manager to succeed F. Lee Norton, who resigned about two months ago.

The Neuman Automotive Service Co., Superior, Wis., has acquired the entire building at 1808-1810 Eleventh Street and will increase its capacity nearly threefold. It manufactures replacement parts and equipment for passenger and commercial cars, tractors and engines. Frank Neuman is proprietor.

The Wisconsin-Appleton Co. has taken over the plant and business of the Stowell Co., South Milwaukee, Wis., manufacturer of malleable castings, hardware specialties, etc. Departments which were recently damaged by fire have been repaired and operations are about to be resumed.

## Gulf States

BIRMINGHAM, Jan. 31.

THE Riverside Boiler & Welding Co., 115 Bridge Street, Wichita Falls, Tex., will make extensions in its plant and install equipment for electric welding, boiler and tank repairs, etc. A power punch, shears, drill press and other tools will be purchased.

The Dixon Creek Oil Co., Amarillo Building, Amarillo, Tex., is considering the construction of a new oil storage and distributing plant, reported to cost about \$160,000 with equipment. It will have a capacity of 1,000,000 bbl.

The Standard Box & Veneer Co., Hammond, La., has tentative plans for rebuilding the portion of its mill destroyed by fire Jan. 22, with loss reported at close to \$175,000 including machinery.

The Alabama Power Co., Birmingham, is reported to be considering the construction of a steam-operated electric generating plant at Jackson, Ala. The company has recently taken over the municipal light and power plant at that place.

The Goodyear Tire & Rubber Co., Akron, Ohio, has plans for a two-story factory branch and distributing plant at Carrollton Avenue and St. Louis Street, New Orleans, to cost about \$75,000.

The Interstate Natural Gas Co., New Orleans, has acquired about 12 acres at Ferriday, La., and will use a portion of the site for a new compressor plant, to cost close to \$150,000 with equipment.

The Miami Water Co., 47 West Flagler Street, Miami, Fla., is said to be planning the construction of an elevated steel tank and tower on S. W. Eleventh Street, with capacity of about 100,000 gal.

The Florida Power & Light Co., Miami, Fla., has work under way on a new ice-manufacturing plant at Fort Myers, Fla., to cost about \$150,000 with equipment.

The Bain-Bealrd Co., Inc., 329 Reynolds Street, Cedar Grove, La., has plans for a new one-story building, 65 x 85 ft., to be equipped for welding and kindred mechanical work. Seymour Van Os, Merchants Building, Shreveport, La., is architect.

The Town Council, Pelahatchie, Miss., is asking bids until Feb. 8 for equipment for a municipal waterworks, including pumping machinery and 75,000-gal. elevated steel tank and tower. W. B. Montgomery, Jackson, Miss., is consulting engineer.

The New Orleans Public Service, Inc., New Orleans, operating electric light and power properties, is disposing of a bond issue of \$8,000,000, a portion of the proceeds to be used for extensions and improvements. H. B. Flowers is president.

The Phillips Petroleum Co., Bartlesville, Okla., is planning the immediate construction of a new gasoline refinery in the North Hutchinson field, vicinity of Amarillo, Tex., to cost in excess of \$100,000 with equipment. The company has work in progress on a similar plant in the South Hutchinson field, to be ready for service early in March.

The Houston Lighting & Power Co., Houston, Tex., is said to have plans under way for extensions and improvements in its Deepwater electric power plant, to cost approximately \$750,000 with machinery. It is also purposed to construct an automatic power substation at Canal and Mack Streets, to cost about \$100,000 with equipment.

The City Council, Fayetteville, Tex., plans the installation of pumping machinery in connection with extensions and betterments in the municipal waterworks. A 50,000-gal. capacity steel tank and tower will be installed. A fund of \$30,000 has been arranged for the work.

## Pacific Coast

SAN FRANCISCO, Jan. 26.

THE Pacific States Electric Co., San Francisco, manufacturer of electrical equipment, will occupy under lease a three-story and basement factory to be erected at Tenth and Bryant Streets by the Investment Properties Corporation, on which superstructure will soon begin. The entire project will cost about \$350,000. Hunter & Hudson, Rialto Building, are engineers.

The City Council, San Diego, has rescinded a recent award for eight deep-well pumping units for the municipal water system, and has authorized immediate readvertising of bids.

The appropriation of \$42,000,000 for expansion during 1927 by the Southern California Edison Co., Los Angeles, will be divided as follows: Hydroelectric plant at Big Creek, \$12,400,000; steel tower transmission line from Big Creek to Los Angeles, \$2,600,000; initial unit of steam-operated electric generating plant at Long Beach, \$4,280,000; steel tower transmission line from Laguna-Bell substation to new steam-electric power plant, Long Beach, \$1,175,000; extensions and improvements to Laguna-Bell substation, \$900,000 including equipment; new substation in the Long Beach section, \$2,400,000 with equipment, and miscellaneous plant and system betterments.

The Bunker Hill & Sullivan Mining Co., Kellogg, Idaho, is planning the construction of a new mill of three-unit type to cost about \$2,500,000 with machinery. Work on the first unit will be started soon and will cost approximately \$1,000,000 of the gross amount noted.

The Crown Willamette Paper Co., 248 Battery Street, San Francisco, has concluded negotiations with the Provincial Government at Vancouver, B. C., for a proposed paper and pulp mill, with hydroelectric power plant on the east coast of Vancouver Island. A townsite will be located at that place. The initial mill will be equipped for an output of 1000 tons of newsprint per day; the hydroelectric generating plant will be located at Campbell River Falls. The entire project is reported to cost close to \$10,000,000 with machinery.

The Up-to-Date Pattern Co., 901 North Spring Street, Los Angeles, manufacturer of metal and wood patterns, has awarded a general contract to Joseph Schuck, 1223 West Sixty-first Street, for a new one-story plant, 80 x 120 ft., to cost approximately \$35,000 with equipment.

The Union Ice Co., 354 Pine Street, San Francisco, will soon ask bids on general contract for a new one-story plant at Colusa, Cal., to cost about \$45,000 with equipment. The engineering department of the company is in charge.



The Rheem Mfg. Co., Forty-fifth and Horton Streets, Emeryville, Cal., manufacturer of sheet metal products, has completed the installation of new machinery and is now producing about 500 steel drums daily, which will be increased shortly to 1000. The Rheem company is operated in connection with the Pacific Galvanizing Co. Both plants represent an investment in excess of \$250,000.

The Sectional Brake Lining Corporation, 1124 West Washington Street, Los Angeles, has been incorporated with a capital stock of \$20,000 to manufacture sectional transmission lining for Ford cars. The company has its own plant and the products will be distributed through jobbers.

The Atlas-Imperial Engine Co., manufacturer of Diesel engines for marine and oil field use, with factory and main offices at Oakland, has established a branch office at 439 S. San Pedro Street, Los Angeles, in charge of G. H. Wallace.

## Canada

Toronto, Jan. 31.

**M**ACHINE tool sales continue to show improvement and those for the month of January reached a satisfactory total. New business is coming forward in good volume, and while some lists are appearing, the bulk of current purchases has been in units of one or two. The automotive industry is showing more interest in tools for replacement, but no lists have appeared for new works. A good demand for single tools is coming from garages and automobile repair plants. Small tools are more active and purchases are being made both for immediate needs and for stock. The Canadian National Railways will, it is understood, spend some \$20,000,000 during the year on rails, locomotives and other equipment, and it is believed that some car shops will require additional tools and machinery. Plans of the Canadian Pacific Railway will also involve the purchase of tools.

The plant of the Galt Foundry Co., Beverley Street, Galt, Ont., was destroyed by fire Jan. 27, with a loss of \$15,000.

The erection of a plant for the extraction of oil from shale will be started soon in the vicinity of the New Brunswick Shale Co.'s holdings in Albert County, N. B. The plant will be erected in units. Further information may be obtained from Matthew Lodge, Canadian National Railway director, Moncton, N. B.

Sarnia, Ont., interests associated with the Cleveland-Sarnia Saw Mills Co., and the McDonald Engineering Co. of Canada, Ltd., plan the erection of a grain elevator at Sarnia to cost upward of \$500,000. The Sarnia Elevator Co., has been organized and a site for the proposed elevator has been secured. B. P. Bole, president Cleveland-Sarnia Saw Mills Co., and R. P. Durham, president McDonald Engineering Co., are directors of the new company.

Bids will be called soon by the Stewart Terminal Elevator Co., Port Arthur, Ont., for the erection of a 1,000,000-bu. addition to the company's elevator. Plans and specifications are being prepared by C. D. Howe & Co., engineers. Tenders for the foundation work will be called within a few days.

N. M. Paterson & Co., Fort William, Ont., have awarded contract for an addition to their grain elevator to the Fegles Construction Co., Ltd. It will cost approximately \$1,000,000.

The Jessop Steel Co., 50 King William Street, Hamilton, Ont., has been made Canadian representative for the Hepenstall Forge & Knife Co., Pittsburgh.

### Western Canada

The construction program of the British Columbia Electric Railway Co., Vancouver, B. C., for the year will involve an expenditure of about \$5,000,000. A start will be made on the Bridge River development project, on which plans are now being prepared, to cost \$1,500,000. Projects in the Lower Mainland will be carried out at an expenditure of \$1,500,000, and it is also intended to complete the power development of the Alouette power plant at Stave Lake. Other undertakings are also included in the work of the company.

It is stated that the Sydney Roofing & Paper Co., Victoria, B. C., which will build a pulp plant on the Industrial Reservation at a cost of \$100,000, will purchase all machinery and equipment in Canada. Plans for the mill are being prepared by K. B. Spurgin.

Bids will be received until Feb. 14, by the chairman of the Committee on Public Utilities, Winnipeg, for three 2500 kva. single phase transformers; six 3000 kva. 60,000 volt, single phase transformers; a quantity of 15,000 volt oil circuit breakers and a quantity of 7500 volt oil circuit breakers; specifications at the office of the Hydro Electric System, 55 Princess Street, Winnipeg.

## Foreign

**T**HE International Power Securities Corporation, 40 Wall Street, New York, J. E. Aldred, president, operating foreign power utilities, is disposing of a bond issue of \$5,000,000, the fund to be used in part for extensions and improvements, particularly in connection with the Societa Generale Elettrica dell'Adamello (Adamello General Electric Co.), Milan, Italy, including the completion of hydroelectric and steam-electric power developments now in progress. The hydroelectric power plant will be equipped for a capacity of 100,500 hp., and the steam-operated electric generating plant, located on the Po River, Piacenza, will have an output of 26,800 hp., to be increased later to 53,600 hp. On completion of these projects, the company will have a total generating capacity of 235,980 hp.

The Skoda Works, Prague, Czechoslovakia, manufacturer of cigarette-packing machines and parts, is planning expansion to include the production of other tobacco factory machinery and cigarette-rolling equipment. The American Consulate, Prague Elbert Baldwin, commercial attaché has information regarding the work.

The South American Gulf Oil Corporation, a subsidiary of the Gulf Oil Corporation, Frick Annex, Pittsburgh, has secured an option on the leases of oil properties in Colombia, held by the Colombia Syndicate, comprising about a million acres east of the Magdalena River. The South American company plans extensive development work, including the construction of storage and distributing plants, pipe lines, etc. Franklin D. Mooney heads the organization.

The Sao Paulo Tramway, Light & Power Co., Sao Paulo, Brazil, has plans under way for the construction of additional sections to its Serra do Mar hydroelectric generating station, vicinity of Sao Paulo. The first unit, recently completed, has a capacity of close to 200,000 hp., while the proposed extensions will be equipped for an additional output of 250,000 hp. The American Consulate, Rio de Janeiro, Brazil, Fred C. Eastin, vice-consul, has information regarding the project.

The Municipal Council at Achacachi, Bolivia, has secured permission from the Bolivian Government for the construction of a municipal hydroelectric power plant on the Keka River. Information at the office of the Electrical Equipment Division, Bureau of Foreign and Domestic Commerce, Washington, reference Bolivia No. 231782.

## Industrial Finances

Net income of the Superior Steel Corporation, Pittsburgh, for the quarter ended Dec. 31, 1926, was \$5,712, equivalent to about 5c. a share on the 100,000 shares of common stock. This compares with \$52,970 or 52c. a share in the preceding quarter and \$95,481 or 95c. a share for the corresponding quarter of 1925. Net income for the last year, after interest, depreciation, Federal taxes, etc., was \$332,078 or \$2.82 a share as compared with \$122,139 or \$1.22 a share in 1925.

Net income, after all charges, of the Acme Steel Co., Chicago, for 1926 amounted to \$1,179,204, equal to \$6.39 a share on the 182,965 shares of common stock outstanding, and compared with \$1,493,170 or \$6.51 a share on the 173,226 common shares in 1925. Net sales during 1926 aggregated \$9,196,974, comparing with \$9,023,230 for the preceding year.

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Net income of the Crucible Steel Co. of America, New York, for the year ended Dec. 31, 1926, after all charges, amounted to \$6,547,731, equivalent after preferred dividends to \$8.72 a share on the 550,000 shares of common stock outstanding. This compares with \$5,703,619 or \$7.19 a share on the common stock in the preceding year. Unfilled orders, as of Dec. 31 last, aggregated 159,314 tons, comparing with 153,925 tons on the same date in 1925.

The Gulf States Steel Co., Birmingham, in its preliminary report for the year ended Dec. 31, 1926, reports a net profit after taxes, depreciation, etc., of \$799,792, equivalent after preferred dividend requirements to \$5.27 a share on the 125,000 shares of common stock outstanding. In 1925 the company showed a net profit of \$1,036,777, equal to \$7.18 a share. In the December quarter the company earned \$234,851 or \$1.59 a share, comparing with \$148,288 or 90c. a share in the preceding quarter and with \$258,252 or \$1.78 a share in the fourth quarter of 1925.

Net profit of the Virginia Iron, Coal & Coke Co., Roanoke, Va., for the quarter just passed amounted to \$100,467 after depreciation, bond interest, etc., comparing with \$36,382 in the preceding quarter, and, after subtracting losses for the first half, equivalent to a profit of \$87,216 for the year.

The Chicago Pneumatic Tool Co., New York, and subsidiaries report a net income of \$508,431 or \$5.26 a share on the 96,272 shares of common stock for the quarter just passed, as compared with \$255,884 or \$2.46 a share on the 104,086 shares of common in the corresponding quarter of 1925. Net profit for the year after depreciation, Federal taxes, etc., amounted to \$1,226,837, equivalent to \$12.74 per share of common stock, and comparing with \$716,493 or \$6.88 a share in 1925.

The North Side Bank, Evansville, Ind., has been named receiver of the Berryhill Malleable Iron Co., Evansville, manufacturer of malleable iron castings. The suit to appoint a receiver was filed for the purpose of conserving the company's assets and of operating under more favorable circumstances.

The Vincennes Bridge Co., Vincennes, Ind., steel fabricator, has announced plans to increase its capitalization from \$50,000 to \$750,000. The common stock will be increased from \$50,000 to \$250,000 and \$500,000 in preferred stock will be issued.

The Blaw-Knox Co., Pittsburgh, in 1926, showed a net profit before dividends of \$1,612,450, compared with \$1,219,420 in 1925, and a balance after preferred dividends of \$1,557,612 in 1926, compared with \$1,551,688 in 1925. The company disbursed \$869,468 in common stock dividends in 1926 and \$746,115 in 1925, or \$3.50 and \$3, respectively per share.

New and important financial interests have become identified with the American Brown Boveri Electric Corporation, through the election to the directorate of representatives of Blair & Co., Inc., the Central Union Trust Co., the Equitable Trust Co., New York, and Curtis & Sanger, Boston.

Stockholders of the Black & Decker Mfg. Co., Baltimore, have ratified the proposal of the directors that the capital structure of the company be revamped. Under the new plan 290,000 shares of stock will be authorized, of which 40,000 shares will be preferred with a par value of \$25 per share and 250,000 shares of no par value, 100,000 shares of which will be issued in exchange for the 40,000 shares of common stock now outstanding of a par value of \$25 a share in the proportion of 2½ shares of new for one share of old.

Stockholders of the Donner Steel Co., Buffalo, have approved the plan of its directors to increase the capital of the company from 140,000 to 630,000 shares. Each share of the first preferred 8 per cent stock is exchangeable for one share of new 8 per cent cumulative preferred, two shares of no par value stock and \$12 in cash; each share of outstanding 7 per cent preferred, Series A, cumulative, is exchangeable for five shares of new no par stock; each share of cumulative 7 per cent, Series B, is exchangeable for six shares of new no par stock, while the old common will be exchanged share for share into new no par stock.

The authorized capital of the Heim Grinder Co., Danbury, Conn., has been reduced from \$800,000 to \$2,000. All assets except \$2,000 will be transferred to Cincinnati Grinders, Inc., Cincinnati.

Stockholders and creditors of the Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis., have been called into joint meeting on Feb. 17 to consider the advisability of choosing a committee to protect their interests in a foreclosure action instituted in the Oshkosh circuit court. The litigation refers to a trust deed executed by the motor company to secure the payment of certain bonds. The complaint states that interest due on the bonds July 1, 1926, has not been paid, nor have taxes assessed for the year 1925 been paid. W. G. Maxcy, of Oshkosh, recently was appointed receiver of the company.

## THE LAST WORD

(Contributed by the Reader Service Department of the Iron Age Publishing Co.)



**O**VERCOMING, by a supreme effort, our natural distaste for talking about ourselves, we quote from a letter written us by an engineer in the Kimberley diamond mining district:

THE IRON AGE is very much sought after here. In engineering circles it has a splendid reception, and people marvel at its production.

"You need not go back to the tin suit days for examples of ignorance of hardening metals," writes R. M. "In his book about Africa, Livingstone tells of seeing 'a javelin of iron light upon the cranium of a hippopotamus and curl up like the proboscis of a butterfly.'"

A hard-headed hippo and a soft-hearted weapon should never meet, and if we were an up-and-coming, enterprising maker of carburizing equipment, we would request THE IRON AGE Department of Research to survey the African market.



Those who point to the large output of automobiles in support of the contention that the home is now used only as a place to sleep should not overlook the fact that the output of sewing machines in 1925 was close to one million.



Why he did it, we have no idea, but in a letter to us about the Annual Number, a Texas foundryman reminisced thus:

We regret to observe that there are fifty times as many thefts, arsons, murders, bigamies, divorces and crooked dealings, per 1000 of population, as when the writer associated himself with this business 53 years ago.

The snows of yesteryear were always deeper, the winters colder, the "younger generation" better behaved, and the older generation more law-abiding. Fifty years hence we shall probably bemoan to our grandchildren the passing of these present "good old days."

By that time prohibition may be in effect, and age will dim the memories of the early struggles of Mr. Volstead's child.

A. H. D.

